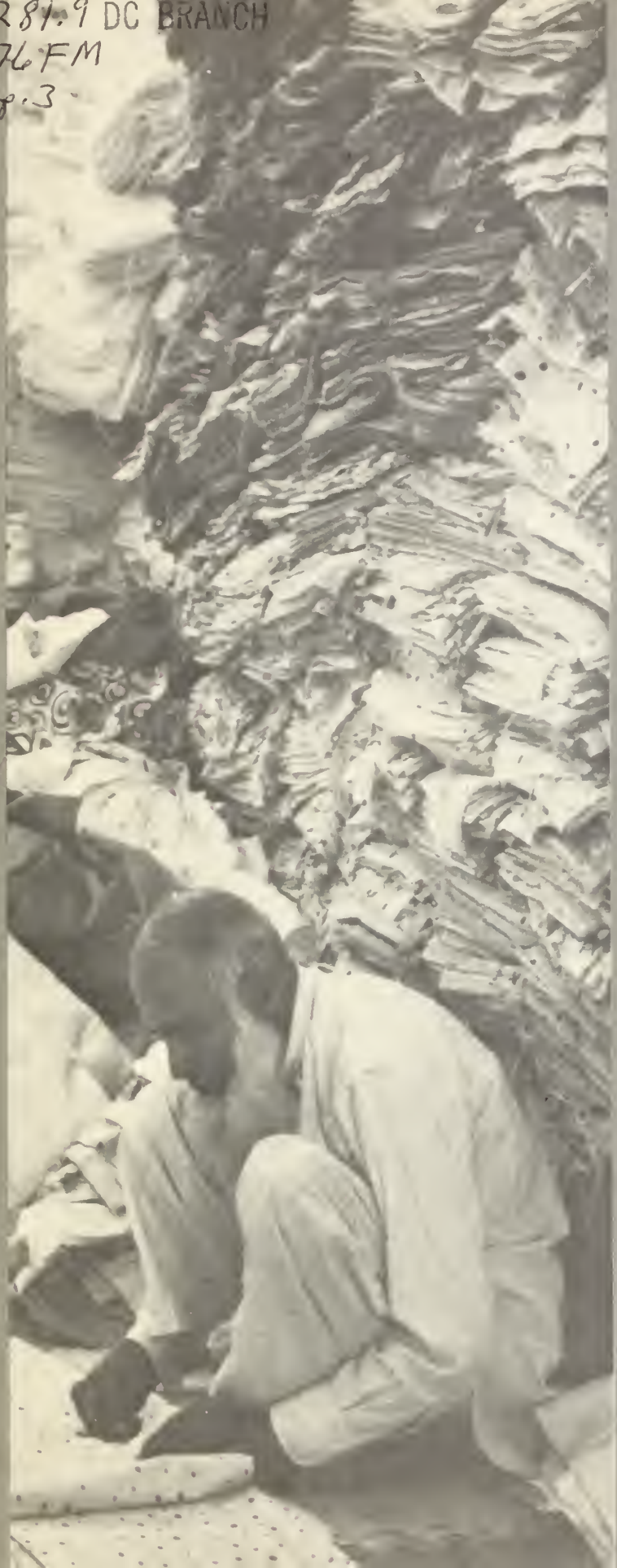
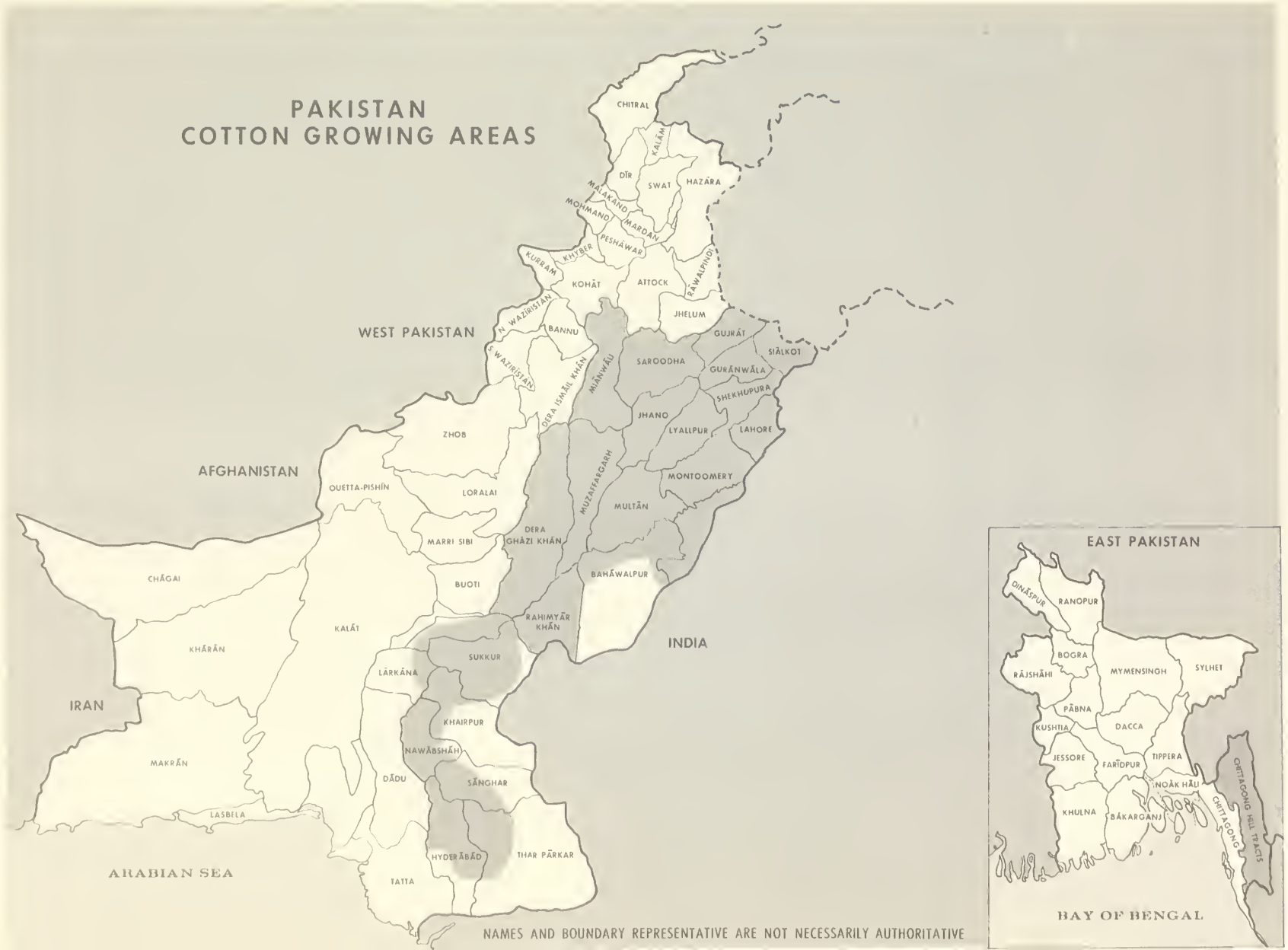


COTTON IN PAKISTAN

FAS M-233
U.S. Department of Agriculture
Foreign Agricultural Service
August 1971


PAKISTAN
COTTON GROWING AREAS
CHITRAL
KALĀM
DĪR
SWAT
HAZĀRA
MALAKAND
MOHMAND
MARDAN
PESHĀWAR
KURRAM
KHYBER
KOHĀT
ATTOCK
RĀWALPINDI
JHELUM
WEST PAKISTAN
N. WAZIRISTAN
BANNU
S. WAZIRISTAN
DERA ISMĀIL KHĀN
MIĀNWĀLI
SAROODHA
GUJRĀT
SIĀLKOT
GURĀNWĀLA
SHEKHUPURA
JHANO
LYALLPUR
LAHORE
ZHOB
AFGHANISTAN
QUETTA-PISHĪN
LORALAI
MUZAFFARGARH
MONTOOMERY
MULTĀN
DERA GHĀZI KHĀN
MARRI SIBI
BUOTI
BAHĀWALPUR
CHĀGAI
KHĀRĀN
KALĀT
RAHIMYĀR KHĀN
SUKKUR
INDIA
LĀRKĀNA
IRAN
KHAIRPUR
NAWĀBSHĀH
MAKRĀN
DĀDU
SĀNGHAR
LASBELA
HYDERĀBĀD
THAR PĀRKAR
ARABIAN SEA
TATTA
EAST PAKISTAN
DINĀJPUR
RANGPUR
BOGRA
RĀJSHĀHI
MYMENSINGH
SYLHET
PĀBNA
KUSHTIA
DACCA
JESSORE
FARĪDPUR
TIPPERA
NOĀKHĀLI
CHITTAGONG HILL TRACTS
KHULNA
BĀKARGANJ
CHITTAGONG
BAY OF BENGAL
NAMES AND BOUNDARY REPRESENTATIVE ARE NOT NECESSARILY AUTHORITATIVE

FOREWORD

For many years, Pakistan has been a major producer and exporter of cotton and an important U.S. competitor in the export of shorter staple cotton. Now, however, the Pakistani cotton industry is at a critical juncture in time when a sharp increase in cotton production is needed to satisfy an expanding domestic textile industry and to remain a major exporter of raw cotton. The success of steps taken in the next few years to increase per acre cotton yields and to expand acreage will determine whether the raw cotton industry can serve two masters.

This study is another in the continuing series of reports on competitive cotton developments in foreign countries. It is intended to help U.S. cotton interests evaluate prospective developments in the Pakistan cotton industry and their impact upon future exports of U.S. cotton in the years ahead. The study is based in part on information obtained by the author on travel within Pakistan in November 1970. A previous publication on Pakistan cotton is *Cotton in Pakistan*, FAS-M-151, September 1963.

We wish to express our appreciation to the various industry representatives, particularly the Pakistan Central Cotton Committee and the Karachi Cotton Association, as well as Government officials and farmers in Pakistan who supplied information for this study. Also, we would like to thank the U.S. Agricultural Attaché and his staff in Islamabad for their assistance.

H. Reiter Webb, Jr.
Director, Cotton Division

CONTENTS

COTTON IN PAKISTAN

By Harry C. Bryan
Cotton Division

TRENDS AND PROSPECTS

The Pakistan cotton industry, with production having remained almost static over the past 4 years, is at a crossroad. It must choose between remaining a major raw cotton exporter at the expense of domestic consumption, allowing the rapidly expanding textile industry to absorb an increased share of domestic production, or satisfying both needs by sharply expanding cotton production.

Currently, the latter alternative appears to hold the upper hand, with industry leaders confident that the country will expand cotton production sufficiently to remain a major exporter.

The Government of Pakistan also hopes to keep cotton production trending upward for the next few years. In its fourth Five-Year Plan, the Government has set a production target of 3.4 million bales (of 480 lb. net) for 1974-75, compared with about 2.5 million in 1970-71. This would provide an exportable surplus of 800,000 bales per year after the increasing domestic mill requirement of about 2.6 million bales has been met. Industry officials are hopeful that as a result of rising returns to producers, about half of the production increase will take place in 1971-72.

Since Pakistan has approached previous production goals, there is confidence that this one will be reached. Although there is some trend toward the longer staple varieties about three-fourths of Pakistan's outturn will probably continue to be 1 inch or shorter in staple length.

Working in favor of production gains is the increased return to producers. Raw cotton prices received by producers in the 1970-71 season were 20 percent higher than in 1969-70. Domestic mill and export prices for Pakistan cotton have risen, but competition between the expanding local textile industry and exporters for available cotton has caused producer prices to post even larger gains than have occurred on world markets.

In addition, since August 1970, exporters of raw cotton have been eligible to retain, in the form of bonus vouchers, 10 percent of the foreign exchange they earn. They can use these vouchers to import a large number of items for which foreign exchange is not otherwise available, or they can sell them for up to 175 percent of their face value. This makes raw cotton exports more competitive with cotton textile exports, which earn retention of 45 percent of foreign exchange.

If prices remain favorable, 250,000 to 300,000 acres of newly irrigated land may be used for cotton in the next 5 years. This would bring total area to about 4.6 million acres, compared with the 4.3 million planted in 1969-70 and again in 1970-71. Much of this increase—about 150,000 acres—could take place in the 1971-72 season at the expense of sugarcane, wheat, forage, and other crops. Such a gain would be almost double the average yearly increase of 79,000 acres over the past 15 years.

Even greater than the emphasis on area expansion is that on increasing yields from the low levels that now prevail: the yield for irrigated cotton, at 287 pounds per acre, is one of the world's lowest. Both large and small producers are expected to aim for greater per-acre yield by use of more fertilizer, insecticides, and selected seeds—improvements which the vast majority of small producers have been unable to make in the past.

Some medium-sized farms do obtain a yield of over a bale per acre, and 2 bales per acre are not uncommon on larger progressive farms. However, these remain the exception, and a real yield breakthrough is still needed.

One factor that could limit expansion is the lack of irrigation water—both canal and pump. This could retard the development of new areas, the selection of cropping patterns, and the shifting from one crop to another within established areas.

Note: No detailed evaluation has been attempted of the effect of the civil disturbances, which developed in East Pakistan in the first part of 1971, on the Pakistan cotton industry. About 99 percent of Pakistan's cotton production and 85 percent of the cotton textile industry is located in West Pakistan. Under Pakistan's fourth Five-Year Plan for economic development considerable effort was pointed toward improving and expanding the capacity of the East Pakistan cotton mills. These efforts will probably be delayed for a period. However, increased cotton mill activity in the West Wing may offset any short-term interruption of cotton textile output in the East Wing until the situation returns to normal.

The cost of custom ginning—often requested by large producers, special producers of long-staple cotton (1¼ inch), and a few multipliers of planting seed—is low, reportedly averaging $5 to $7.50 per bale, compared with the U.S. average cost of about $19 per bale.

As a cotton exporter, Pakistan is an important U.S. competitor in markets for the shorter staple range since three-fourths of its shipments are 1 inch or shorter in staple length.

About one-third of Pakistan's exports usually go to Communist countries under barter arrangements. Large U.S. cotton markets—Hong Kong, Japan, and several West European countries—take the remainder. In 1969-70, Hong Kong was the leading market for Pakistani cotton, taking 98,000 bales. Japan was the second with 62,000 bales, while the USSR and Mainland China tied for third place with 49,000 bales each.

Total exports of Pakistani cotton have ranged from 400,000 to 800,000 bales per year in the past 5 years, with exports in the past two seasons nearer the lower figure. The outlook for 1970-71 is for shipments to continue in the lower range, mainly because of rapidly rising domestic utilization. By 1974-75, however, production should have increased sufficiently to boost exports to a higher level, possibly around 800,000 bales. Both domestic and export cotton prices have risen about 2 cents per pound over the past 2 years because of strong demand in domestic and foreign markets.

The cotton textile industry has grown rapidly since Pakistan gained independence in 1947. In 1970 there were probably 145 large mills with a total of 3.0 million spindles and 37,000 looms. Production of cotton yarn amounted to 770 million pounds with the large mills producing 787 million yards of cotton cloth. In addition, another 900 million yards of cloth were produced by the handloom or cottage industry. Cotton textile exports were about 30 percent of domestic production.

Average per capita consumption of textiles was about 12 yards in 1970 and by 1975 is expected to increase to 15 yards. Textile exports are scheduled to double by 1975. These increases will require a doubling of loom numbers and an increase of 1.6 million in spindle numbers.

Cotton currently accounts for about 90 percent of total textile consumption and is expected to remain the predominant fiber used. Use of manmade fibers is on the rise, however, and in the next few years their share of consumption may rise to 10-12 percent from the 7 percent now prevailing.

Cotton supply and demand in Pakistan

Year[1]	Beginning stocks	Production	Imports	Total supply	Consumption	Destroyed	Exports	Ending stocks
	1,000 bales[2]	*1,000 bales*[2]	*1,000 bales*[2]	*1,000 bales*[2]	*1,000 bales*[2]	*1,000 bales*[2]	*1,000 bales*[2]	*1,000 bales*[2]
1947	250	925	1	1,176	120	3	875	178
1948	178	826	2	1,006	130	10	676	190
1949	190	1,035	2	1,227	115	7	854	251
1950	251	1,225	2	1,478	286	13	1,039	140
1951	140	1,340	2	1,482	175	4	903	400
1952	400	1,552	4	1,956	230	3	1,273	450
1953	450	1,179	4	1,633	440	--	893	300
1954	300	1,303	3	1,606	660	2	634	310
1955	310	1,444	15	1,769	820	1	723	225
1956	225	1,410	20	1,655	850	4	506	295
1957	295	1,405	3	1,703	920	--	383	400
1958	400	1,265	6	1,671	1,020	1	375	275
1959	275	1,355	6	1,636	1,100	3	333	200
1960	200	1,398	4	1,602	1,115	3	244	240
1961	240	1,505	42	1,787	1,120	8	299	360
1962	360	1,690	9	2,059	1,175	1	683	200
1963	200	1,940	4	2,144	1,250	5	689	200
1964	200	1,747	9	1,956	1,300	1	485	170
1965	170	1,915	7	2,092	1,300	5	492	295
1966	295	2,100	10	2,405	1,350	5	558	492
1967	492	2,390	18	2,900	1,450	13	887	550
1968	550	2,429	1	2,980	1,625	79	574	702
1969[3]	702	2,474	20	3,196	2,000	--	393	803
1970[3]	803	2,500	10	3,313	2,200	--	400	713

[1] Beginning August 1. [2] 480 pounds net. [3] Preliminary.

GEOGRAPHY OF PAKISTAN

Pakistan is a geographically divided country with a total area of 365,529 square miles. The two sections, East and West, are separated by the 1,000 air miles across India. They differ considerably in economy, terrain, climate, size, and ethnic groups but are united by a common religion.

West Pakistan has an area of 310,403 square miles and is bounded by the Arabian Sea, India, Iran, Afghanistan, and the disputed territories of Jammu and Kashmir. In 1970, the population was 60 million with a density of 193 per square mile.

The Indus River and its tributaries—the Jhelum, Chenab, Sutlej, and Ravi—flow from the north to the Arabian Sea and form the fertile and intensively cultivated Indus Valley, which extends from the central plains to the sea. Most of West Pakistan, however, is arid, with an average annual rainfall of less than 10 inches, and is cultivable only through an extensive irrigation system. The region is dry and hot near the coast but cool in the northeastern uplands. Regional temperatures range from 30°F in winter to 120°F in summer.

Agriculture in West Pakistan is diverse: 44 percent of the total crop acreage (39.3 million acres) is in wheat, 12 percent in cotton, 10 percent in rice, 9 percent in chickpeas, 7 percent in millets, and 5 percent in other crops, which include sorghum, sugarcane, barley, and oilseeds. There is a considerable variation in the land-ownership patterns: about 2.4 million farmers own an average of 1.91 acres; 2.1 million an average of 33.1; 88,000 an average of 74.6; and 14,000 an average of 350. Almost 400,000 farmers have 25 acres or more. East Pakistan has an area of only 55,126 square miles and is bounded by India, Burma, and the Bay of Bengal. The region is an alluvial plain formed by the many branches and tributaries of the Ganges and Brahmaputra Rivers. It has a maximum rainfall of about 250 inches, and the temperature averages 84°F year around. In 1970 it had a population of 70 million, a density of 1,270 persons per square mile. About 70 percent of the population depends totally on agriculture for a livelihood. The average farm is 3.5 acres in size, and, as would be expected, pressure on land resources is heavy. The economy is based mostly on rice produced on a subsistance basis. Practically all of Pakistan's jute is produced in East Pakistan, as are tea and some oilseed crops; tobacco, and sugarcane are also grown. Cotton is a very minor crop.

For both East and West Pakistan, the population is growing at a rate of about 3 percent per year. The standard of living of most Pakistanis, whose average annual per capita income is the equivalent of about 107 dollars, is low. Diseases are widespread, and life expectancy is estimated at between 45 and 50 years.

For fiscal 1968-69, Pakistan's gross national product (at constant 1960 prices) was $10.7 billion. Agriculture is the most important sector contributing about 40 percent to the GNP and employing about three-fourths of the labor force. In addition, about 75 percent of total exports consists of raw and processed agricultural products. Wheat and rice are the principal food crops, while jute and cotton are the mainstays of industry and the export trade. Manufacturing contributes 12 percent to the GNP. The cotton textile industry accounts for 35 percent of the GNP contributed by the manufacturing sector and employs 55 percent of the industrial labor force.

THE RAW COTTON INDUSTRY

An early form of cotton was cultivated by the Mohenjo-Daro Civilization in the Indus Valley about 5,000 years ago, but not until 1914 was American Upland cotton introduced to the Indus Valley. Since that period, production has increased to the point that Pakistan is now among the top five upland cotton producers in the world—behind the United States, the USSR, Mainland China, and India. Competing in some years for this fifth position are Brazil and Mexico.

Producing areas

Cotton is produced in both East and West Pakistan. However, about 99 percent of Pakistan's cotton acreage and production is located in West Pakistan. In West Pakistan about 90 percent of the acreage is in Pak-Upland cotton, and production of this cotton constitutes 99 percent of total West Pakistani cotton production.

Cotton production in West Pakistan is centered in the great Indus River Basin, which is about 900 miles in length. The cotton producing areas are considered as the northern and southern zones.

The northern zone accounts for three-fourths of the acreage and production of upland and Desi cotton. It is comprised of seven districts, but only three are of major importance in cotton production. Multan is the most

Pakistan's cotton acreage and production by area, 1969-70 season[1]

Area	Acreage			Production		
	Upland	Desi	Total	Upland	Desi	Total
EAST PAKISTAN	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 bales*	*1,000 bales*	*1,000 bales*
Dacca	--	0.1	0.1	--	(2)	(2)
Chittagong	--	33.7	33.7	--	11.1	11.1
Rajshahi	--	(3)	(3)	--	(2)	(2)
Khulna	--	(3)	(3)	--	(2)	(2)
Total	--	33.8	33.8	--	11.1	11.1
WEST PAKISTAN						
Northern zone:						
Peshawar	0.1	3.6	3.7	(2)	1.2	1.2
D.I. Khan	--	2.2	2.2	--	.8	.8
Rawalpindi	24.2	17.9	42.1	7.4	4.9	12.3
Lahore	49.6	116.6	166.2	18.6	39.0	57.6
Sargodha	617.8	39.3	657.1	270.2	13.8	284.0
Multan	1,667.3	20.6	1,687.9	1,087.7	8.2	1,095.9
Bahawalpur	610.7	119.0	729.7	353.8	31.3	385.1
Subtotal	2,969.7	319.2	3,288.9	1,737.7	99.2	1,836.9
Southern zone:						
Khairpur	222.4	89.6	312.0	120.5	34.7	155.2
Hyderabad	708.2	--	708.2	470.1	--	470.1
Quetta	--	--	--	--	--	--
Kalat	--	--	--	--	--	--
Karachi	--	--	--	--	--	--
Subtotal	930.6	89.6	1,020.2	590.6	34.7	625.3
Total	3,900.3	408.8	4,309.1	2,328.3	133.9	2,462.2
Total Pakistan	3,900.3	442.6	4,342.9	2,328.3	145.0	2,473.3

[1] August-September. [2] Less than 50 bales. [3] Less than 50 acres.

important district with about 56 percent of the acreage, and 63 percent of the production. Both Bahawalpur and Sargodha Districts contain 21 percent of acreage in the northern zone, but Bahawalpur accounts for 20 percent of the production while Sargodha has only 15 percent.

In the southern zone, there are two major cotton-producing districts, Hyderabad and Khairpur. Hyderabad contains about 76 percent of the acreage in the zone and accounts for about 80 percent of the production.

Production, acreage and yield

Past trends.—Increases in both acreage and yield have contributed to substantial production gains over the long term, although in the past few years, output has not kept up with demand. During the 1950's, production averaged 1.35 million bales, with a range of 1.0 million to 1.6 million. It then rose sharply in the first half of the 1960's and increased further in the second half, exceeding the 2.0-million-bale mark for the first time in 1966-67 and averaging 2.27 million bales during that latter period.

Similar expansion has been posted for acreage. Except for 2 years immediately following Independence, acreage ranged from 3.1 to 3.5 million between 1947 and 1954. Then, in the following 10 years, it moved from 3.5 million to 3.9 million. Area passed the 4-million-acre mark for the first time in 1966-67 and by the end of the 1960's had reached 4.3 million.

Per-acre yields, while still low compared with those of other countries, have improved in the past decade, with virtually all of the gain in upland cotton. During the 1960's, yields of this type moved up to an average of 260 pounds of lint, compared with less than 200 previously. Yields for Desi cotton, on the other hand, were only about

Cotton acreage, yield, and production in Pakistan

Year beginning August 1	Acreage					Yield					Production[1]				
	West Pakistan			East Pakistan	All	West Pakistan			East Pakistan	All	West Pakistan			East Pakistan	All
	Desi	Upland	Total	Comilla		Desi	Upland	Total	Comilla		Desi	Upland	Total	Comilla	
	1,000 acres	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Pounds per acre*	*Pounds per acre*	*Pounds per acre*	*Pounds per acre*	*Pounds per acre*	*1,000 bales[1]*	*1,000 bales[1]*	*1,000 bales[1]*	*1,000 bales[1]*	*1,000 bales[1]*
Average:															
1950-54	467	2,685	3,152	57	3,209	144	197	189	118	188	140	1,100	1,240	15	1,255
1955-59	494	2,949	3,443	51	3,494	159	195	190	122	189	164	1,195	1,359	13	1,372
1960-64	422	3,037	3,459	40	3,499	150	237	228	168	227	133	1,509	1,642	14	1,656
1965-69	459	3,719	4,178	35	4,213	146	273	259	165	259	140	2,118	2,258	12	2,270
Annual:															
1950-51	416	2,600	3,016	55	3,071	150	188	183	131	182	130	1,018	1,148	15	1,163
1951-52	494	2,823	3,317	58	3,375	117	173	165	124	164	120	1,020	1,140	15	1,155
1952-53	481	2,941	3,422	58	3,480	143	214	204	116	203	143	1,314	1,457	14	1,471
1953-54	376	2,493	2,869	58	2,927	169	199	195	116	193	132	1,032	1,164	14	1,178
1954-55	569	2,566	3,135	58	3,193	148	209	198	124	196	176	1,116	1,292	15	1,307
1955-56	528	2,950	3,478	51	3,529	165	193	189	113	188	181	1,189	1,371	12	1,383
1956-57	513	3,042	3,555	52	3,607	166	192	189	111	188	177	1,220	1,397	12	1,409
1957-58	543	3,047	3,590	51	3,641	157	192	186	113	185	178	1,216	1,394	12	1,406
1958-59	428	2,845	3,273	51	3,324	137	198	190	141	189	122	1,174	1,296	15	1,311
1959-60	457	2,861	3,318	52	3,370	169	197	194	138	193	161	1,177	1,338	15	1,353
1960-61	406	2,789	3,195	47	3,242	167	214	208	153	207	141	1,241	1,382	15	1,397
1961-62	476	2,973	3,449	39	3,488	171	213	207	172	207	170	1,319	1,489	14	1,503
1962-63	434	2,961	3,395	40	3,435	139	252	238	156	237	126	1,556	1,682	13	1,695
1963-64	441	3,193	3,634	38	3,672	137	270	254	177	253	126	1,796	1,922	14	1,936
1964-65	356	3,268	3,624	35	3,659	136	240	230	165	229	101	1,634	1,735	12	1,747
1965-66	425	3,433	3,858	37	3,895	117	252	237	169	236	104	1,800	1,904	13	1,917
1966-67	453	3,550	4,003	36	4,039	148	269	255	160	254	140	1,988	2,128	12	2,140
1967-68	525	3,886	4,411	36	4,447	156	273	259	160	258	171	2,207	2,378	12	2,390
1968-69	483	3,825	4,308	34	4,342	149	285	269	155	269	150	2,268	2,418	11	2,429
1969-70[2]	409	3,900	4,309	34	4,343	157	287	274	169	273	134	2,328	2,462	12	2,474

[1] 480 pounds net. [2] Preliminary.

SOURCE: Ministry of Agriculture.

150 pounds in 1969-70—practically unchanged from those 20 years earlier. Comilla Desi cotton in East Pakistan has shown some slight improvement, with yields now around the 165-pound level.

Future prospects.—To meet expanding domestic requirements and at the same time maintain exports, the Government of Pakistan plans to keep cotton production trending upward in the next 5 years. In its fourth Five-Year Plan, the Government has set a production target of 3.4 million bales for 1974-75, the last year of the Plan. Higher prices and cash returns to growers in the 1970-71 season may be the incentive needed to increase per-acre yields and to attract acreage from competing crops into cotton.

As far as area is concerned, about 1.2 million acres of land are expected to be brought into irrigated cultivation in the next 5 years, and 7.5 million acres already under cultivation will receive additional irrigation water. All of this land will not, of course, go into cotton production. However, it has been estimated that 250,000 to 300,000 acres of irrigated land could go into cotton in the next 5 years. Potential cotton-growing areas exist in the Gudu, Thal, and Taunsa irrigation districts as well as the D.I. Khan irrigation district.

In addition to these plans for new acreages, cotton is now in a good position to compete with other crops for available land as a result of the higher prices received by cotton producers. Overexpansion in sugarcane, for instance, could possibly lead to some switching to cotton. Also, with additional water available for irrigation, land in wheat and other foodgrains could be diverted to cotton, especially in view of the great strides made in foodgrain production in the past several years and their rather static prices.

Because of these factors, it is felt that a minimum of 150,000 acres may be shifted to cotton in 1971, with further shifts taking place in the following years.

Still needed, in spite of these anticipated acreage gains, is a substantial expansion in yields. In the latter half of the 1960's, per-acre yields averaged 274 pounds per acre, an increase of 35 pounds above the average for the first half of the 1960's. But in the next 5 years, an even more rapid rate will have to be attained if production is to reach the desired level. It is felt, however, that the potential now exists for a breakthrough in yields—confidence that is enhanced by the recent success Pakistani farmers had in increasing per-acre yields of Mexi-Pak wheat.

One of the most critical factors in expanding yields is increasing the supply of irrigation water for existing irrigated acreage, as well as providing water for new acreage. Improvement in irrigation practices is also needed. Cultivation practices are improving, as are the supply and use of fertilizers and pesticides. In addition, new higher yielding upland varieties are becoming more widely accepted. The number of plants per acre, now at about 6,000 acres, will have to be increased to 12,000-15,000; some of this increase is expected to take place.

Higher prices and returns obtained by growers during the 1970-71 season should be a considerable incentive to use the available production aids. With the various improvements—actual and potential—that have been noted, considerable increases in per-acre yields can be expected.

Characteristics of Pakistani cotton

The Pak-upland cotton varieties are noted for high tensile strength, spinning qualities, and uniformity. While over three-fourths of production is still medium-staple length (13/16″ - 1″), there has been a sharp increase in medium-long- (1 1/32″ - 1 3/32″) and long-staple cotton (1 1/8″ - 1 5/16″) at the expense of short-staple cotton (under 13/16″).[1] Production of this short-staple cotton (all Desi) in 1969-70 was only 7 percent of the total. (The Comilla Desi cotton is noted for its shortness and harshness.)

Long-staple cotton was first produced on a commercial basis in 1968-69, and by 1969-70 production had reached 16,000 bales. This trend to longer staple lengths is expected to continue in the future, but at a slow pace.

Varieties

Pakistan produces two types of cotton—the upland or American cotton (Gossypium hirsutum) and the short staple or Desi cotton (Gossypium arboreum).

[1] It should be noted that the staple length descriptions used in Pakistan differ somewhat from those used in other countries. For example, some of the cotton described outside Pakistan as "short staple" would be called "medium staple" in Pakistan. Corresponding differences would apply to longer cottons.

Fiber characteristics of Pakistani cotton

Type and variety	Range in staple length	Micronaire range	Tensile strength	Maturity-caustic aire index
Upland:	*Inches*		*1,000 lb. per sq. inch*	
4-F	3/4 - 7/8	5.0 - 6.0	80 - 90	--
LSS	27/32 - 15/16	4.5 - 5.5	80 - 90	78.0 - 86.0
M-100 & M-4[1]	15/16-1	4.0 - 5.0	85	74.9 - 82.0
L-11	15/16 - 1-1/16	4.5 - 5.5	90	76.0 - 84.0
AC-134	15/16 - 1-1/16	4.0 - 5.0	85	76.0 - 84.0
BS-1[2]	15/16 - 1-1/16	4.0 - 5.0	85	--
MS-39 & MS-40	1-1/4	4.3 - 4.5	90 - 95	--
Desi:				
231-R[3]	1/2 - 5/8	7.0 - 9.0	70 - 80	84.0 - 92.0
TD-1[4]	3/8 - 5/8	7.5 - 10.5	70 - 80	85.0 - 94.0
Comilla	3/8 - 1/2	8.0 - 11.0	70 - 80	86.0 - 94.0

[1] These varieties known to the trade as Sind NT. [2] This variety known to the trade as 289-F, 124-F, 199-F, and 289-F/43. [3] This variety known to the trade as Punjab Desi. [4] This variety known to the trade as Sind Desi.

Pakistan's cotton production by staple length

Year beginning August 1	Under 13/16" (Short[1])	13/16" - 1" (Medium[1])	1-1/32" - 1-3/32" (Medium Long[1])	1-1/8" - 1-5/16" (Long[1])	Total
Average:	*1,000 bales*[2]	*1,000 bales*[2]	*1,000 bales*[2]	*1,000 bales*[2]	*1,000 bales*[2]
1950-54	225	1,029	--	--	1,254
1955-59	234	1,128	10	--	1,372
1960-64	189	1,358	108	--	1,655
1965-69	181	1,837	248	4	2,270
Annual:					
1950-51	216	947	--	--	1,163
1951-52	216	938	--	--	1,154
1952-53	232	1,239	--	--	1,471
1953-54	200	978	--	--	1,178
1954-55	261	1,046	--	--	1,307
1955-56	254	1,129	--	--	1,383
1956-57	250	1,159	--	--	1,409
1957-58	251	1,155	--	--	1,406
1958-59	195	1,098	18	--	1,311
1959-60	224	1,100	29	--	1,353
1960-61	189	1,153	56	--	1,398
1961-62	223	1,194	86	--	1,503
1962-63	185	1,401	109	--	1,695
1963-64	194	1,603	139	--	1,936
1964-65	157	1,443	146	--	1,746
1965-66	158	1,588	171	--	1,917
1966-67	192	1,740	208	--	2,140
1967-68	190	1,945	254	--	2,389
1968-69	198	1,926	301	4	2,429
1969-70	165	1,986	307	16	2,474

[1] According to International definition of staple length. [2] 480 pounds net.

Effort is also being made to produce the Egyptian cotton (Gossypium barbadense), but this is reportedly still in the research stage. As a result of reselection from acclimate varieties of Egyptian cotton, two varieties of seed, Giza-26, and Karna-31, have been successfully isolated. These two varieties have given a staple up to 1.27″ with promising yields. Additional research in further improving these varieties and Coastland, a long staple upland variety, is taking place. Also, some research has been done in crossing Egyptian and adopted-upland varieties. Promising results are reported, but additional research is needed, especially in yield improvement.

Pak-Upland. The Upland varieties under cultivation are 4F, LSS, N.T. (M4 and M100), 289F (including 124F, 199F, and B.S.-1), AC-134, MS-39, and MS-40. These cottons are among the medium, medium-long, and long staple varieties and include two new varieties, MS-39 and MS-40, which possess a staple length of 1-1/4″ and attain good yields. Pakistan's work in cotton breeding has been toward developing varieties and increasing yields of cotton with a staple of 1-1/16″ to 1-3/16″. A description of the varieties of Pak-Upland follows:

- 4-F—This was the first commercially produced upland cotton grown in Pakistan. For many years following its 1914 beginning, 4-F was the only upland cotton variety grown. It is still produced on a limited scale in the Districts of Jhan, Lyallpur, Bahawalpur, and Montgomery but is gradually being phased out, mostly because of low yields. In 1969-70 production was only 43,000 bales from 158,600 acres.
- LSS—A selection of seed from 4-F was first distributed in 1935. It is now grown in the Districts of Lyallpur, Sargodha, Mianwali, Jhang, and Gujrat. In 1969-70 production reached 269,000 bales from 404,700 acres.
- 289-F—This variety, first introduced in the Punjab in 1923, has been replaced by several new selections; they are 124F, 199F, 289F/43, and B.S.-1 or 13/26. However, the commercial trade name 289F is still used for all these cottons. B.S.-1 or 13/26 is now the most widely used selection, which is grown in the Districts of Bahawalpur and Rahin Yar Khan. In 1969-70 production was 564,000 bales from 394,800 acres.
- AC-134—This variety was released in 1959, and production has continued to increase rapidly. It is grown in Sargodha, Lyallpur, parts of Jhang, Muzaffargarh, D.G. Khan, Sahiwal, and parts of Bahawalpur District. In 1969-70 production was 1,300,000 bales on 1,948,300 acres.
- M-100 and M-4—These varieties are known to the trade as Sind N.T. and are practically the only varieties grown in the former Province of Sind, which covers the entire southern part of the Indus River Basin. The Districts in which these varieties are produced are Hyderabad and Khairpur. In 1969-70 production of M-4 and M-100 totaled 564,000 bales, and area planted was 861,200 and 68,100 acres respectively.
- MS-39 and MS-40—These varieties, which were introduced in 1969, are characterized by staple-lengths of 1-1/4″ and relatively good yields. They were developed for the purpose of increasing production of cottons with longer staple. Both the area and production are expected to increase rapidly. These varieties are grown in the Multan, Muzaffargarh, and D.G. Khan Districts. In 1969-1970, production was 16,000 bales from an estimated 25,000 acres.

Desi.—West Pakistan's short-staple varieties are commercially known as Sind, Bahawalpur, and Punjab Desi, which exhibit the following characteristics:

- Punjab Desi—The most prominent strain now grown is 231R which is produced on a limited scale, mostly nonirrigated, in parts of Gujranwala and the District of Lahore, or the northern producing area.
- Sind Desi—The most widely grown strain now is TD 1 which is produced on a limited scale in the former Sind Province or the southern producing area.

Comilla cotton.—East Pakistan produces the world's only commercial quantities of the very short, harsh Comilla. This cotton is reputedly among the shortest and harshest of all the world's cottons. Because it is so short, coarse, and highly resilient, Comilla is used to make blankets and as padding in clothing. In East Pakistan, Comilla is spun and woven for apparel by the local population on a cottage industry basis.

Most of the production is centered in the Chittagong Hill Tracts in southeastern East Pakistan, although a small quantity is produced in the north-central section.

Methods used in producing Comilla cotton are quite primitive. Before the beginning of the monsoon rains, a suitable tract of land is selected and cleared. Smaller trees and underbrush are cut down, allowed to dry, then burned. When the monsoon rains begin in late May or early June, a mixture of cottonseed and seed of several other crops such as rice, corn, sesame, vegetables, and legumes are planted together in mounds. Some hoe cultivation is employed to keep weed and brush growth down during the rainy season. The different crops are harvested as they

mature. Cotton, generally the last to mature, is picked during October through December. Once the land has been used for a crop it is allowed to lie fallow for at least 3 years, during which time native vegetation rapidly retakes the area.

About two-thirds of the annual outturn of Comilla is used locally by the cottage textile industry; the rest is exported. Production has fluctuated rather narrowly at around 11,000 to 15,000 bales annually since Independence. Area, too, has been relatively stable at 35,000 acres. Yields are low, of course, because of production methods. However, the yields have increased to about 165 pounds per acre.

There is little likelihood of a significant upswing in Comilla cotton production. Increasing availabilities of factory-produced yarns and fabrics are reducing use of Comilla cotton by the cottage industry, and there appears to be little opportunity to expand exports.

Crop competition for land

The agricultural economy of Pakistan is such that each farmer must produce a foodgrain crop to feed the family and livestock before producing a cash crop. Wheat is the basic foodgrain produced. In addition to family use, it is used for wages and bartering in the villages. Corn, millet, and sorghum are other important grains. For cash crops, cotton competes mostly with sugarcane in all but the southern areas, where bananas and mangos are the main competition.

Supply of irrigation water, both quantity and timeliness of availability, has been the major determining factor on crops produced. Wheat and other grain crops are produced in the winter and cotton in the summer but not in the same season. Under this system, the limited water supply can be used throughout the year as some land remains fallow. Because of the need for foodgrains, prices of cash crops in the past have had very little influence on crop selection.

With the supply of irrigation water increasing—from both canal and well sources—a greater flexibility in crop selection is possible, and, thus, economic decisions are playing an increasing role. Farmers are now becoming more responsive to prices received, with sugarcane and oilseed acreage increasing because of higher prices. With higher cotton prices for the 1970-71 season, cotton will be able to compete more readily for uncommitted acreage.

The total availability of cropland in West Pakistan in 1969-70 was estimated at 39.3 million acres. Probably an additional 10 million acres could go into production of all crops.

West Pakistan's cotton acreage in relation to other principal crops[1]

Season	Cotton	Wheat	Rice	Corn	Other grains	Chick peas	Rapeseed	Sugarcane	Tobacco
Average:	*Mil. acres*	*Mil. acres*	*Mil. acres*	*Mil. acres*	*Mil. acres*	*Mil. acres*	*Mil. acres*	*Mil. acres*	*Mil. acres*
1960-64	3.50	12.32	3.08	1.19	3.73	2.89	1.19	1.16	0.11
1965-69	4.22	14.21	3.66	1.47	3.65	2.60	1.15	1.44	.16
Annual:									
1960-61	3.24	11.46	2.92	1.19	3.48	2.73	1.23	.96	.10
1961-62	3.49	12.17	3.00	1.17	3.78	2.95	1.11	1.10	.11
1962-63	3.44	12.41	2.93	1.13	3.79	3.03	1.22	1.31	.11
1963-64	3.67	12.40	3.18	1.24	3.42	2.75	1.17	1.18	.11
1964-65	3.66	13.14	3.35	1.20	4.16	2.99	1.21	1.24	.12
1965-66	3.90	12.74	3.44	1.34	3.92	2.64	1.09	1.48	.14
1966-67	4.04	13.21	3.48	1.39	3.63	3.07	1.14	1.61	.18
1967-68	4.45	14.79	3.51	1.50	4.13	2.77	1.34	1.25	.17
1968-69	4.34	15.22	3.84	1.52	3.38	2.37	1.04	1.34	.16
1969-70	4.35	15.09	4.01	1.60	3.21	2.14	1.13	1.53	.17
1970-71[2]	4.40	14.80	4.00	1.65	3.60	2.30	1.15	1.60	.17

[1] Does not include 2 million to 3 million acres of fruits, vegetables, spices, legumes, and other "minor" crops.
[2] Preliminary.

Compiled from official sources.

Farm size

The most typical cotton-producing unit is about 12.5 acres, farmed by a man and his family with a pair of bullocks. Such a unit will have about 5 acres of cotton and 6 to 7 of wheat with the remainder in forage for the bullocks. The family may own this unit or work it on a tenant basis. Most large landowners farm their acreage by dividing it in this manner on a fifty-fifty share with the tenant.

The tenants provide planting seed, bullocks and labor, and the owner pays taxes and water charges which are minimal. Such expenses, as fertilizer, insecticides, and harvesting, are usually shared fifty-fifty; thus very little fertilizer and insecticides are used. There are, of course, larger units usually in the 25-50 acre size range but in some cases as high as several thousand acres. On the larger units, cotton acreage accounts for only about one-third to one-half of total acreage. Productive land suitable for cotton is relatively expensive, ranging from $750 to $1,250 per acre. However, most farmland changes hand by inheritance rather than by commercial transaction.

Production practices

Cotton farming in Pakistan is widely different from the usual concept of cotton growing as held by U.S. farmers. With farm units very small and fragmented, hand labor and animal power are used instead of machinery. The lack of adequate supplies and proper distribution of irrigation water has resulted in improper irrigation practices. Cash inputs, mostly for such items as fertilizer and insecticides, are limited because of the virtual unavailability of production credit. Cotton varieties are selected for their insect resistance and ability to withstand adverse production conditions instead of their yielding ability. All of these various factors combine for a low per-acre yield. Despite these adversities, however, the Pakistani cotton grower, has been able to obtain a reasonably good return with limited cash outlay.

Land preparation and seeding.—The typical cotton grower prepares the land by breaking the ground with a pointed wooden stick or steel-pointed wooden plow drawn by two bullocks. The use of tractors for plowing—though very small—is increasing. The land is broken at a depth of only 4 or 5 inches, and because of the lack of deep plowing, a hard soil layer develops at a fairly shallow depth. This hardpan prevents penetration by the cotton plant's tap root to normal depths and also prevents penetration of irrigation water to desirable depths. The irrigation practices also add to hardpan buildup. This hardpan condition contributes to root rot as the water remains too long at shallow depths.

About 60 percent of the cotton acreage is sown by broadcast; the rest is planted in rows from 20 to 40 inches apart. Broadcast acreage is sown by scattering the seed by hand, with the seed being covered by use of a wooden drag. Broadcast plantings result in bare areas and bunching, and cultivation is not feasible, except by hand.

Irregular cotton stands are also the result of inefficient use of irrigation water, and water applied to poor stands is not the most efficient use of this scarce commodity.

Mechanization.—Most cotton acreage is cultivated by animal-drawn equipment and by hand. Tractor farming began only about 20 years ago, and the number of tractors is still very small, estimated at 5,000. Tractors are used mostly for plowing (there is an increasing number of power tillers in operation) and transporting supplies and crops. Large earth-moving equipment is available for opening up new lands and some leveling operations.

Fertilizer use.—The exact quantity of fertilizer used on cotton is not known; estimates place the figure at one-fourth of the total fertilizer used, which for West Pakistan in 1969-70 was about 300,000 nutrient tons. Fertilizer use for cotton has increased and will probably increase at a more rapid pace in the near future. The Government has encouraged the use of fertilizer by providing a 35-percent subsidy on fertilizer cost. This will probably be reduced gradually during the coming seasons.

Considerable improvement has been made in the distribution system for supplies which now places distribution centers within easy reach of the farmer. Also, the private sector has been permitted to participate in fertilizer distribution, which has assisted tremendously in the increase of fertilizer consumption. In addition to selling fertilizer, these private firms carry on extension and demonstration activities.

Domestic production of fertilizers has been expanding rapidly. Discoveries of large natural gas resources in both East and West Pakistan have been major contributing factors. There are five plants operating in West Pakistan

and one in East Pakistan with an aggregate annual capacity of about 318,000 tons of urea, 86,000 of ammonium sulphate, 75,000 (estimated) of ammonium nitrate and 18,000 of superphosphate.

A number of new facilities are planned or already under construction, but production will not start until after 1971. Thus, Pakistan will rely heavily on imports until these plants are in production to meet increasing fertilizer needs, which have increased twelvefold since 1958.

Pests and diseases.—The cotton plant in Pakistan is subject to many of the same pests and diseases as in other producing countries. The most common pests are the spotted bollworm (Erias Spp), pink bollworm (Pectinophora gossypiella), Jassid (Empoasca devastans), white-fly (Bemesia tabaci) and leaf hoppers. The most common diseases are boll rot and root rot. Neither the boll weevil (Anthonomus grandis) nor the American bollworms (Helcothis zea and H. virescens) occur in Pakistan.

Greater attention in the future will have to be given to pest and disease control with the adoption of higher density plantings, increased fertilizer use, and improved irrigation practices. Another factor to consider is the development and adoption of higher yielding varieties—particularly smoother leaf varieties which are not as resistant to jassids as the older lower yielding varieties.

The cotton area which has received protection from diseases and pests has been limited. In those areas that do receive some plant protection, applications of insecticides and pesticides have not been sufficient for effective control. For the most part, application has been from manually operated backpacks and aerial spraying provided by the Central Government in the Multan area.

Effective employment of aerial spraying is not possible because of small, noncontinuous fields, an insufficient number of planes, and a lack of financing. Reportedly, responsibility for aerial spraying is to be shifted to the Government of West Pakistan, which will be faced by the same problems as well as a financial pinch.

The Government of Pakistan provides a subsidy on the cost of pesticides—75 percent of the cost in West Pakistan and 100 percent in East Pakistan. Aerial spraying has been provided free. These pesticides subsidies are to be reduced by 50 percent in the future. Efforts will be made to place aerial spraying on the same subsidy level.

The total area receiving some form of plant protection in 1969-70 was estimated at only 2.56 million acres in West Pakistan for all crops. A fourfold increase is expected in the next 5 years.

Of the three main types of insecticides—chlorinate and hydrocarbons, organic phosphates, and carbamates—only chlorinated insecticides are manufactured in Pakistan at present. The present installed production capacity for DDT and BHC is 4,000 tons (100 percent) and 3,000 tons per year (12 percent), respectively. Production is reported to be less than capacity, and in 1967-68 production was reported around 1,300 tons of DDT and 500 of BHC. The gap between domestic production and requirements has been only partly met through imports.

Irrigation.—Cotton is produced throughout the entire length of the great Indus Basin—the oldest and longest irrigation system in the world. The entire upland cotton acreage is irrigated, while the Desi acreage is not.

The availability of irrigation water is of vital importance to Pakistani cotton production. In the past the lack of an adequate water supply or proper utilization of available water has been a considerable handicap to increasing production. Without a guaranteed water supply, producers are not inclined to apply cash inputs such as fertilizer and pesticides. Without additional water and proper use of that available new areas cannot be developed.

The Indus Basin Treaty with India provided that Pakistan would obtain the water from three of the six rivers of the Indus River system. Considerable runoff water could not be properly utilized without additional storage facilities. In 1968, Mangla Dam, with a storage capacity of 5.4 million acre feet was completed. A bigger dam on the Indus at Turbella is under construction and will be completed in 1975. Turbella will have a storage capacity of 6.1 million acre feet.

Additional improvements in the surface irrigation system are expected by linking the Indus and Jhelum Rivers, building storage at Chashma, and enlarging existing canals and storage at Khampur and Hub dams.

In the Multan and Lyallpur areas there has been a considerable increase in the number of irrigation wells. Not only is the addition of wells providing water for cotton and other crops, but it also has helped to lower the high water table and reduce the saline conditions which have plagued the area for sometime. The number of private wells was reported at 79,000 in 1969-70, double the number in 1964-65. Further increases in the number of wells are anticipated in the next 5 years—6,000 in the public sector and 30,000 in the private sector.

In 1969-70, surface flow amounted to about 90 million acre feet, while water supplies from private and public wells were estimated at 21 million. In the next 5 years, surface water supplies are expected to increase to 93 million acre feet with water from wells increasing to 33 million.

Plans for the next 5 years call for 7.5 million acres of already irrigated land to be provided with supplementary irrigation, drainage, and reclamation facilities. New areas of 1.2 million acres will be brought under irrigation.

Almost all irrigation done in Pakistan is border flood; that is, small borders are built around the field, or the field is divided into sections which are flooded. Distribution of available supplies of water is such that irrigation must be light although applied frequently—usually 3 to 4 acre-inches of water are available every 15 to 18 days during the cotton-growing season. This results in considerable water losses due to evaporation, as well as a tendency toward salting of the land. Also contributing to the salinity problem is the high water table, particularly in the northern area, which inhibits flushing out of the salts.

Harvesting.—Cotton is harvested over a 4- to 5-month period beginning in September in the southern producing area and about 2 to 3 weeks later in the northern area. The cotton is picked as it opens and entirely by hand, usually with farm family labor—mainly women and children. Additional pickers, when needed, are obtained from neighboring farms or nearby villages.

The practice is not to pay a cash wage for harvesting but instead to give the pickers between one-sixteenth and one-tenth of the cotton picked. A cash wage would amount to 1-2 cents per pound of seed cotton.

Cotton is moved from the field in jute bags containing 82 pounds (one maund) of seed cotton. The maund is the unit by which yield per acre is measured. The seed cotton remains in these bags for storage at the farm until transportation can be arranged to intermediate points or directly to the gin.

There are no indications that picking machines will be used in the foreseeable future. Sufficient labor is available for handpicking of even larger operations and at a considerable cost advantage. Handpicked cotton is cleaner and of higher quality than that picked by machine. Not only are picking machines expensive, but they would require scarce foreign exchange and widespread service facilities which are not currently available. Use of picking machines would also cause changes in cultural methods and ginning practices.

Seed multiplication

Considerable progress has been made in developing improved varieties, and growing and distributing pure seed with high germination, but much remains to be accomplished.

The Pakistan Central Cotton Committee provides the research necessary for development of improved varieties which are released to special multipliers under guidance of the PCCC and the Agricultural Development Corporation (ADC). The seed cotton from the multipliers is ginned under supervision of the ADC. At one time, only the ADC handled the distribution of pure seed, but now the private sector is also involved. However, most producers obtain planting seeds from local gins.

Economic aspects of production

Financing.—In the past, the major cash outlays for cotton farming were for land taxes and water charges. Now, with the emphasis on increasing yields, there is a growing need for cash outlays—for fertilizer, pesticides, machinery, and wells for supplementary irrigation water.

Ginners, local bazaar merchants, and landlords in the past were the major source of credit for the numerous small producers. In return for a loan, those producers not only had to pay high interest rates but also were often required to deliver their seed cotton at discounted prices.

The gins continue to be a primary source of credit (while wishing to stop this practice, the ginners still want to control as much of the production as possible because of the value of the seed for crushing). However, other sources of credit are now also available. These include small loans granted by the Government, loans from newly formed farmer cooperatives, and loans against crop mortgages by the Agricultural Development Bank (ADB), a semiautonomous Government organization.

Loans can also be obtained from the ADB for seeds, fertilizer, insecticides, land taxes, water charges, wells, pumps, and machinery. These loans amount up to $20 per acre and carry interest charges of 7 to 8 percent—quite

low compared with rates from other sources. The number of ADB loans made to cotton producers has been limited but is expected to increase.

Producer prices.—Because of the introduction of the bonus voucher on raw cotton exports and increased buying competition for a limited production, prices received by producers increased considerably in 1970-71 over the previous season. In 1970-71, it was estimated that producers received the equivalent of 12.81 cents per pound for seed cotton, compared with 10.24 cents in 1969-70.

Prices received by the producers for their seed cotton in previous years had been relatively stable and relatively unattractive to the producers. With production and other costs increasing and seed cotton prices steady, cotton was becoming a less attractive crop.

The high prices now being received by producers are expected to reverse those trends, making cotton more attractive as a crop and thus spurring increased production.

Production costs.—Limited information suggests that the direct costs of producing cotton in many areas of Pakistan remain quite low compared with U.S. levels. However, total cost to the average producer is relatively high, and profits per acre are held down by low average yields.

Since most growers market their production as seed cotton, it is difficult to make a direct comparison with production costs in the U.S. For the 1970 season, price for seed cotton was 12.8 cents per pound, with 33-percent gin outturn, which was equal to about 26.4 cents per pound, lint basis. This unusually high price for lint reflects the high price of cottonseed for crushing, which averages $120-$150 per short ton. Pakistan is usually in short supply of edible oils and oil products. Coupled with a rising demand for these products, prices of cottonseed for crushing have increased considerably.

The average producer's direct cost of growing cotton is low because cash inputs of fertilizer, pesticides, and machinery are minimum, and labor costs are low. Efforts being made to increase per-acre yields could change this situation.

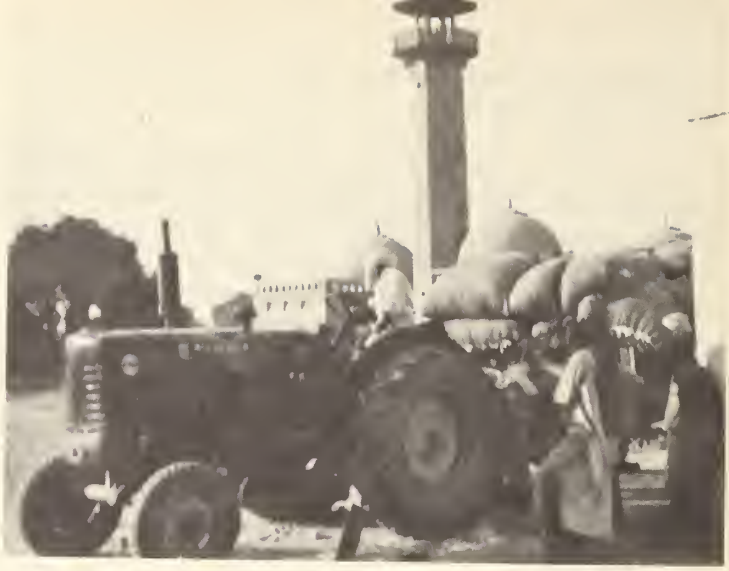
Total costs are relatively high because of charges made for land use. However, this is not a reliable indication of the profitability of producing cotton. Cropping patterns are usually determined by requirements for cash outlay and the availability of irrigation water.

Cost estimates presented here are based on discussions with knowledgeable cotton leaders in Pakistan and on limited available cost data. These data should be considered as a rough guide, as there is substantial variation on individual farms because of differing production practices and yields. Because of higher returns for seed cotton in the 1970 season, producers, with average and slightly below average yields made a profit. Maintaining above-average yields is the key to profitable cotton production in Pakistan.

Estimated yield and cost of producing cotton in Pakistan 1970-71 and 1969-70

Item	1970-71[1]		1969-70[2]	
	Superior	Average	Superior	Average
Seed cotton per acre ..... pounds...	1,809	822	1,809	822
Lint cotton per acre ..... do ...	603	274	603	274
Price received by producers, per pound unginned ..... cents[3] ..	12.81	12.81	10.24	10.24
Income per acre ..... dol[3] ..	232	105	185	84
Direct cost per acre ..... do ...	80	42	78	42
Total cost per acre ..... do ...	125	77	122	77
Net profit per acre ..... do ...	107	28	63	7
Total cost per pound lint cotton .... cents[3] ..	20.7	28.1	20.2	28.1
Direct cost per pound lint ..... do ...	13.3	15.3	12.9	15.3

[1]Growers receive PRs50 per 82.25 pounds of seed cotton, with 33-percent lint outturn. Growers received 26.43 cents per pound lint basis. Cottonseed for crushing averages $120-$150 per short ton. [2]Growers receive PRs40 per 82.25 pounds of seed cotton, with 33-percent lint outturn. Growers received 18.26 cents per pound lint basis. Cottonseed for crushing averages $120-$150 per short ton. [3]Converted from rupees to dollars at the official rate of 4.8 to $1.00.



Left, camels carry seed cotton to the gin. Right, another load arrives at the gin yard, where it is weighed; mosque in background serves workers at the gin.

Cotton below has been weighed and separated according to quality. At right, the cotton is being spread out for drying before ginning; the cotton is kept separated by qualities, and the same qualities are ginned together. In background, dried cotton awaits ginning.

GINNING AND MARKETING

Grower marketing practices.—The harvest is sold as seed cotton by most farmers, with the exception of large producers, special producers of long-staple cotton (staple length 1¼"), and a few multipliers of planting seed who request custom ginning. The seed cotton is usually sold directly to the ginners in the northern producing area, while, in the south, sales may also be made to middlemen or merchants in local bazaars.

When selling directly to ginners, whether they be producers or various middlemen, two types of contracts are utilized. Under the first—called a fixed contract—the growers receive the market price when the seed cotton is delivered. Under the second—an unfixed contract—the growers deliver the seed cotton to the ginner and have the opportunity to fix the price within 60 days at the prevailing market price. In past seasons, when the price was relatively stable or the producer was not under pressure to settle debts, most sales were under unfixed contracts since producers were hopeful of price increases. Most sales in the 1970 season, however, were under fixed contracts as farmers took advantage of higher prices offered.

Ginning.—Pakistan is believed to have adequate ginning capacity to handle larger harvests. Efforts are being made, however, to modernize or replace older gins and switch more capacity from roller to saw gins. A majority of the domestic cotton mills reportedly prefer the saw-ginned fibers, and with the installation of new equipment this trend for cotton with a lower trash content is expected to continue. It is also reported that there is a gradual shift away from roller-ginned to saw-ginned cotton by foreign buyers. However, some European buyers still prefer roller-gin fiber because of the lower nep count.

In 1970 an estimated 215 saw gins were in operation in West Pakistan. In addition there were several hundred roller gins in operation.

The great share of the smaller roller gin operations, are used to gin individual farm output and perhaps the output of nearby neighbors. Very few of the smaller roller gins have presses. Most of the larger roller gin installations are located within a complex which includes a saw gin and press.

The percentage of the crop processed by roller gins has declined steadily in recent years. For the 1970 season, it was estimated that over two-thirds of the harvest was processed by saw gins. The portion of crop processed by the saw gins is expected to increase to three-fourths of the harvest within the next couple of seasons, expecially if the anticipated increase in production takes place.

Number of cotton gins and presses in Pakistan, 1967

Area	Factories	Presses		Saw gins		Roller gins			
						Single		Double	
	Number	Number	Registered press mark	Number	Number of stands	Number	Number of stands	Number	Number of stands
Southern Zone:									
Hyderabad	57	48	55	45	121	18	447	47	1,093
Khairpur	21	17	19	11	22	20	869	2	56
Northern Zone:									
Bahawalpur	106	48	34	22	53	95	1,950	8	186
Multan	160	134	93	94	224	112	3,227	33	584
Sargodha	185	58	0	23	58	176	2,609	8	102
Lahore	271	24	18	5	9	263	1,400	1	30
Total	800	329	219	200	487	[1] 684	10,502	[2] 99	2,051

[1] Of which 380 had four stands or less for a total of 901 stands. [2] Of which eight had four stands or less for a total of 22 stands.

In a typical large commercial gin operation, seed cotton is delivered to a weigh station within the gin complex. Usually the seed cotton is in a jute bag of about 82 pounds, and transported by camel back, bullock, or tractor pulled trailer or truck. At the weigh station, the seed cotton is weighed, and cursory inspection as to quality is made. A weight slip is issued, which is the basis of payment settlement. Exchange of jute bags is made with the ginners.

After the seed cotton is received, it is unofficially graded by the ginner according to quality. If deliveries are heavy, the bags may be stored according to quality. The seed cotton is segregated by quality and is spread out to a depth of 2 feet on the ground or concrete aprons for drying. The cotton is turned several times to speed drying. After drying, the seed cotton is either rebagged or moved by air suction into large storage areas. From these areas, the cotton enters the ginning process.

The more modern saw gins have a full line of equipment, including dryers (which are seldom used), cleaners and extractors, and lint cleaners (1 and 2). The saw gins are usually 3 stands with 80 and 90 saws, but there are some 88's and 120's. Even though the more modern gins contain a full line of equipment, many steps are bypassed. A hydraulic press is included in most modern gins. However, a few modern gins have an older press located in an adjacent building, and are used to press both saw-ginned and roller-ginned cotton. The hydraulic presses are of relatively high density.

The ginned cotton is pressed into bales of approximately 400 pounds each. Jute bagging and steel ties are used, and the average tare is about 8 pounds. Bales for domestic use are not as well packaged as those for export. In the older presses the bands are looped.

Information on the average number of bales ginned per saw gin is not available. It is estimated, however, that each saw gin handles about 8,000 bales. In the large commercial installations, gins are generally operated 19 to 24 hours a day for over 100 days. The larger gins with the seed cotton storage capacity available could operate for a longer period.

Exact ginning costs are not known, but are estimated to be equivalent to about $5.00 per bale (480 lb. equivalent). Custom ginning is reportedly available at about $7.50 per bale. There is very little custom ginning.

During the ginning process these seeds are kept separate and stored in covered buildings. Cottonseed for processing is stored in the open and crushed during the season in oil mills, usually located within the grounds.

Marketing ginned cotton.—Pakistan's ginned cotton is handled through a well established marketing system, at the head of which is the Karachi Cotton Association and its Cotton Exchange. This futures market allows the crop to be handled smoothly by all facets of the industry. Ginners make frequent use of this market to hedge their purchases of seed cotton from the producers. In many instances, the ginners will have on hand 5,000 to 10,000 bales equivalent of seed cotton of stated qualities which can be purchased by local mills or exporters and can be ginned to their specifications, under their supervision.

Most ginned cotton, particularly for export, is bought on private types. Foreign buyers are offered protection by conditions set by the sales agreement. The Cotton Association also arbitrates quality disputes and maintains sets of standard boxes for both Upland and Desi varieties.

Karachi Cotton Exchange.—The Karachi Cotton Association operates the cotton exchange. This hedge (futures) market is perhaps the largest active futures market in the world, at present. Daily volume of sales during the season may sometimes reach 100,000 bales, but, a normal volume is about 50,000 bales.

The basis for the Pakistan cotton contract is fine machine roller-ginned 4F, 25/32″ staple. Standard descriptions of Pakistani cotton—i.e., AC-134, N.T., 289F, LSS, and 4F are tenderable against the Pakistan Cotton Contract, but Desi cotton is not.

The futures market is used as a hedge by ginners, textile mills, and cotton merchants and speculators. Among producers only the large ones—who probably have other cotton interests—use the futures market.

Future prices on the Karachi Cotton Exchange

Month	Contracts					
	January 1970	March 1970	May 1970	January 1971	March 1971	May 1971
	U.S. Cents per lb.	*U.S. Cents per lb.*	*U.S. Cents per lb.*	*U.S. Cents per lb.*	*U.S. Cents per lb.*	*U.S. Cents per lb.*
1969:						
September	18.32	18.64	--	--	--	--
October	18.10	18.44	--	--	--	--
November	18.41	19.71	--	--	--	--
December	18.87	19.22	--	--	--	--
1970:						
January	19.03	19.28	--	--	--	--
February	--	21.13	21.16	--	--	--
March	--	20.57	20.10	--	--	--
April	--	--	20.45	19.60	--	--
May	--	--	20.66	20.10	--	--
June	--	--	--	21.06	21.20	--
July	--	--	--	22.91	23.04	--
August	--	--	--	23.94	23.72	--
September	--	--	--	24.03	24.22	--
October	--	--	--	25.69	25.83	--
November	--	--	--	26.75	26.59	--
December	--	--	--	27.28	27.40	--
1971:						
January	--	--	--	27.02	27.44	--
February	--	--	--	--	27.71	28.09
March	--	--	--	--	26.71	27.48

Cotton prices

In recent years Pakistani cottons have been priced considerable above competitive growths. On the Liverpool, England, cotton market, comparison between Pakistan's 289F and U.S. middling 1" point this out; in the past six seasons, the price difference has ranged from about 1/2 cent in 1967-68 to almost 2 cents in 1968-69 and in 1969-70 to date.

Some trade sources have stated that internal Pakistani cotton prices no longer have any relationship with international prices. Two major reasons have been cited for this lack of price competitiveness: (1) The tremendous increase in domestic consumption which has absorbed much of the potential exportable surplus, and (2) the large proportions of exports which have taken place under barter deals with Communist countries.

In an effort to combat the problem of higher prices and diminishing exports, an export bonus voucher system, which allows retentions of 10 percent of the value of raw cotton exports, was instituted in July 1970. This action was expected to reduce prices by about 15 percent from the Karachi rate. Instead, both future spot quotations increased, and prices continue to reach succeedingly higher levels.

Karachi, Pakistan: Monthly averages of cotton spot prices

Variety	August	September	October	November	December	January	February	March	April	May	June	July	Average 1968-69
1968-69:	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*
Sind Desi	20.58	19.91	19.91	20.37	21.33	22.73	23.03	24.07	25.29	24.79	25.52	26.03	22.80
Punjab Desi	18.38	18.38	18.38	19.30	20.60	22.12	22.24	23.43	24.70	24.43	24.76	25.52	21.85
Bahawalpur Desi	19.65	19.40	19.95	19.81	21.07	22.37	22.50	23.67	24.95	24.64	25.01	25.78	22.40
4F/Rg	19.79	19.14	19.14	19.14	20.68	20.82	21.46	23.40	23.54	26.53	27.22	26.88	22.31
4F/Sg	23.14	21.95	21.95	22.53	22.75	22.43	23.04	24.89	25.68	27.85	28.28	28.54	24.42
LSS/Rg	19.79	19.14	19.14	20.53	20.97	20.94	21.52	23.56	24.43	26.60	27.25	27.01	22.57
LSS/Sg	23.09	21.95	21.95	21.95	22.68	22.46	23.06	24.84	25.69	27.85	28.53	28.28	24.36
NT/Rg	24.08	22.48	21.75	21.50	21.48	21.39	22.13	24.03	24.89	27.07	26.65	27.51	23.75
NT/Sg	26.35	24.52	23.62	23.52	23.52	23.72	24.81	26.67	26.84	29.89	30.29	29.53	26.11
289/Rg	21.58	20.67	21.82	21.91	22.04	21.88	22.38	24.16	24.85	27.07	27.69	27.51	23.63
289/Sg	24.60	22.97	23.70	23.60	23.70	23.71	24.32	26.15	26.67	28.70	29.42	29.99	25.63
AC-134/Rg	22.15	21.18	21.40	22.34	22.46	24.74	22.70	24.47	24.97	27.17	27.88	28.07	24.13
AC-134/Sg	25.43	23.23	23.78	23.90	24.08	24.12	24.86	26.88	27.53	29.42	29.85	29.40	26.04
1969-70:													
Sind Desi	24.94	22.56	21.54	22.21	23.38	24.51	25.50	25.21	24.90	25.17	([1])	26.48	24.22
Punjab Desi	24.34	21.98	21.03	20.18	21.88	23.75	24.44	23.67	23.41	23.64	([1])	24.88	23.02
Bahawalpur Desi	24.59	22.24	21.29	20.93	22.39	24.20	25.46	25.07	24.50	24.66	([1])	25.91	23.75
4F/Rg	25.82	24.80	19.80	19.97	20.86	22.02	23.81	23.23	23.00	23.07	([1])	24.19	22.78
4F/Sg	27.22	26.11	21.10	20.67	21.92	23.16	24.96	24.52	24.44	24.36	([1])	25.71	24.02
LSS/Rg	25.95	24.88	19.82	19.82	21.16	22.13	23.90	23.23	23.00	23.13	([1])	23.99	22.82
LSS/Sg	27.22	26.11	21.10	20.67	22.37	23.25	25.17	24.70	24.65	24.36	([1])	26.48	24.19
NT/Rg	27.61	28.21	22.76	21.73	22.00	22.89	24.60	24.09	24.01	24.08	([1])	26.11	24.37
NT/Sg	28.99	28.65	24.11	23.00	23.62	24.37	26.25	26.04	25.74	26.03	([1])	28.66	25.95
289/Rg	27.48	27.48	22.46	21.78	22.21	22.86	24.53	24.01	23.90	23.89	([1])	25.60	24.20
289/Sg	29.01	28.91	23.67	23.05	23.53	24.27	26.03	25.56	25.57	25.61	([1])	27.89	25.74
AC-134/Rg	27.99	27.60	22.73	22.00	22.20	22.93	24.73	24.20	24.03	24.31	([1])	26.11	24.44
AC-134/Sg	29.54	29.36	23.91	23.19	23.82	24.65	26.48	26.06	25.82	26.16	([1])	28.66	26.15

[1] Not available.

Comparison of U.S. and Pakistan cotton quotations, c.i.f. Liverpool

Month	1965-66		1966-67		1967-68		1968-69		1969-70		1970-71	
	U.S. M 1"	Pakistan 289F	U.S. M 1"	Pakistan 289F	U.S. M 1"	Pakistan 289F	U.S. M 1"	Pakistan 289F	U.S. M 1"	Pakistan 289F	U.S. M 1"	Pakistan 289F
	Cents per lb.	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*	*Cents per lb.*
August	26.17	28.74	24.58	27.00	24.64	25.51	29.20	28.48	25.05	25.96	27.31	28.84
September	26.22	28.45	24.59	26.88	25.06	25.60	29.04	27.89	24.82	25.76	28.16	29.00
October	26.28	28.07	24.61	26.82	25.28	26.08	28.51	27.33	25.23	25.89	28.60	29.76
November	26.29	26.51	24.60	26.26	27.05	27.13	27.24	27.35	25.79	26.18	28.82	30.85
December	26.27	27.62	24.76	25.54	29.44	28.95	26.45	27.43	26.50	27.17	27.83	31.40
January	26.34	28.28	24.99	25.03	29.10	30.64	26.12	27.31	26.50	27.89	28.85	31.57
February	26.46	27.96	25.24	25.84	28.61	28.46	25.69	28.10	26.62	29.55	29.68	32.02
March	26.39	28.07	25.49	26.31	28.25	27.89	25.50	29.35	27.00	29.55	30.52	31.80
April	26.42	28.06	25.66	25.61	27.75	27.50	25.50	(1)	27.31	29.75	(2)	(2)
May	26.42	28.09	25.67	25.82	27.75	29.23	25.50	27.80	27.40	29.44	(2)	(2)
June	25.09	27.52	25.49	25.10	27.92	28.45	25.44	27.45	26.95	29.75	(2)	(2)
July	24.59	27.14	24.56	25.21	28.82	28.70	25.19	27.01	27.06	29.40	(2)	(2)
Average	26.08	27.88	25.02	25.95	27.47	27.84	26.62	27.77	26.35	28.02	[3] 28.72	[3] 30.66

[1] Not quoted. [2] Not available. [3] August-March.

Foreign trade

Exports.–Pakistan's cotton exports have experienced annual fluctuations of over 1 million bales in the 24 years since Independence. The highest level of exports, 1,273,000 bales, was obtained in 1952, while the lowest level, 244,000, was reported for 1960. In the 15 years since 1955, exports showed a rising trend up until recently, when sharply increasing domestic consumption without a similar increase in production, caused exports to decline. In 1969-70, exports totaled only 393,000 bales and may only approximate this level in 1970-71.

Upland cotton exports held to about 80 percent of total cotton exports in the 1960's. With further increases in domestic consumption of upland cotton, this would be lower in the coming years except for expected additional production. About four-fifths of Desi production is being exported, and production is not expected to increase.

Hong Kong is the most important sizeable market for Pakistani cotton, accounting for about 26 percent of total exports in the 5 years ended 1969-70. Japan, with 18 percent, was second, but it has declined in importance in recent years; Mainland China followed with 17 percent.

Of increasing importance as a market for Pakistani cotton have been Eastern Europe, the USSR, and Mainland China.

In the past 5 years approximately 55 percent of Pakistan's cotton has gone to these countries, and reportedly, except for Mainland China, most of these sales have been under barter arrangements. It has been observed on the Karachi market that when barter countries are buying in volume, prices register a sharp increase. Higher prices do not effectively alter the quantity of cotton obtained, as these countries simply adjust the prices of the goods bartered for cotton. Another problem affecting Pakistan's cotton export is that this bartered cotton is often re-exported to other European markets.

Looking to the future, Pakistan desires to attain to an export level of 800,000 bales by 1975 but will have to greatly expand production–to about 3.4 million bales–if this objective is to be achieved.

Exports of Desi cotton during the past 3 seasons have averaged 113,000 bales, or about 18 percent of total cotton exports for the same 3-year period. Japan is by far the largest market for Desi cotton, averaging about 60,000 bales, over one-half of Pakistan's exports, in the past 3 seasons. Mainland China is also an important market, accounting for 32,000 bales, or more than one-fourth of the total.

In November 1967, the export tax on raw cotton exports was abolished. Prior to this action, the export tax had been in effect since October 1947.

On July 10, 1970, exporters of raw cotton became eligible for the first time to retain in the form of bonus vouchers 10 percent of the foreign exchange earned. This step was taken to make Pakastani cotton more competitive and to increase exports by reducing the cotton export price some 15 percent from the Karachi rate. A net return of

PAKISTAN'S Exports of cotton by destination

Destination	Year beginning August 1													
	Average				Annual									
	1950-54	1955-59	1960-64	1965-69	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
	1,000 bales[1]	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]
Australia	29	5	2	2	1	1	3	2	2	2	2	3	2	2
Austria	4	1	1	2	1	(2)	1	1	(2)	(2)	(2)	5	3	2
Belgium	13	4	6	9	1	4	5	12	10	6	3	21	9	7
Bulgaria	1	0	0	3	0	0	0	0	0	1	4	1	5	4
Burma	1	(2)	0	3	0	0	0	0	0	0	0	0	0	17
China, Mainland	152	58	102	96	75	10	59	247	118	101	140	88	102	49
Czechoslovakia	4	3	(2)	7	(2)	1	0	0	0	0	10	6	13	4
France	66	55	17	19	5	12	29	21	18	18	18	38	14	7
Germany, West	41	14	4	9	(2)	7	4	4	4	1	1	39	3	1
Hong Kong	90	39	106	152	58	45	167	169	91	124	156	239	144	98
Hungary	1	3	0	4	0	0	0	0	0	0	6	4	8	2
India	1	6	35	0	2	74	51	0	47	0	0	0	0	0
Italy	59	7	6	6	1	4	16	7	2	2	4	16	2	4
Japan	304	215	136	101	89	117	250	120	102	122	86	167	69	62
Netherlands	5	3	3	8	1	2	5	5	1	7	3	24	3	2
Poland	25	5	2	32	(2)	1	0	0	9	31	30	31	34	35
Romania	0	0	0	8	0	0	0	0	0	0	0	12	11	17
Spain	24	0	2	9	0	0	0	0	12	3	(2)	23	19	1
Switzerland	1	(2)	2	3	(2)	1	6	1	1	3	2	6	1	1
United Kingdom	85	22	28	38	4	9	29	61	38	33	23	74	48	12
United States	7	13	6	4	5	10	5	6	3	4	2	7	4	1
USSR	21	3	7	26	0	0	29	0	5	3	24	21	32	49
Yugoslavia	(2)	0	9	19	0	0	12	26	7	4	15	25	43	7
Other countries	14	8	6	21	1	1	12	7	15	27	29	37	5	9
Total	948	464	480	581	244	299	683	689	485	492	558	887	574	393

[1] 480 pounds net.

[2] Less than 500 bales.

SOURCE: Pakistan Central Statistical Offices; *Statistical Bulletin.*

15 percent was to accrue to the exporter at a bonus voucher price of 150 percent. (The price has actually ranged between 150 and 200 percent.)

This objective was not achieved, however, because of strong demand in relation to supply. Instead, prices increased, as evident by the futures market.

Another objective was to give a higher return to the grower so as to encourage increased cotton production. Higher returns to the producers were obtained.

With the introduction of the bonus voucher on cotton exports, competition between exporters and local mills for available supplies was expected to increase, resulting in higher prices paid by the mills. To overcome this, the existing bonus on export textile products was increased by 5 percent to 45 percent.

The Asiatic-type cotton, including Desi, accounts for all the Pakistani cotton sold to the United States. U.S. imports of this type of cotton, all with a staple length of less than three-fourths inch, are not restricted by quota and are admitted duty-free. The use of Asiatic cotton in the United States is declining however. Total U.S. imports of this type cotton averaged 15,400 bales in 1965-69, Pakistan's share amounted to 4,000 bales.

Imports.—Nearly all imports of cotton into Pakistan in recent years have been extra-long-staple (1 3/8 inches or longer) U.S. cotton under Title I of U.S. Public Law 480. (Title I permits certain countries to purchase selected U.S. agricultural commodities for local currencies instead of spending foreign exchange. There are some limitations and other requirements under these P.L. 480 programs). No extra-long-staple cotton is produced in Pakistan, and production of longer staple upland is limited. In the 10-year period, 1960 through 1969, cotton imports have averaged 11,200 bales—all from the United States. Cotton imports are strictly controlled by the Government through an import licensing system. An import duty equal to 2.73 cents per pound is levied on cotton.

PAKISTAN'S exports of Desi cotton

Destination	Year beginning August 1		
	1967-68	1968-69	1969-70
	Bales[1]	*Bales*[1]	*Bales*[1]
Australia	41	2,691	2,172
Belgium	987	789	274
Bulgaria	--	2,198	863
Canada	163	102	--
China, Mainland	48,586	28,033	18,048
Czechoslovakia	--	--	183
France	9,551	6,983	4,398
Germany, West	815	390	228
Hungary	132	--	90
Italy	184	639	45
Japan	92,325	46,350	42,379
Netherlands	904	1,198	742
Portugal	--	--	46
Switzerland	562	37	464
United Kingdom	5,069	3,468	2,868
United States	8	3,882	1,310
Others	9,250	16	--
Total	168,577	96,776	74,110

[1] 480 pounds net.

U.S. imports of short, harsh Asiatic cotton[1]

Year beginning August 1	Pakistan	India	Burma	Total
Average:	*Bales*[2]	*Bales*[2]	*Bales*[2]	*Bales*[2]
1950-54	7,681	29,068	321	37,070
1955-59	14,936	6,260	86	21,282
1960-64	5,499	13,669	2,593	21,761
1965-69	3,977	11,185	202	15,364
Annual:				
1960-61	6,337	4,072	3,150	13,559
1961-62	6,605	19,585	3,786	29,976
1962-63	5,069	12,787	3,230	21,086
1963-64	6,471	14,579	1,972	23,022
1964-65	3,014	17,321	826	21,161
1965-66	4,093	12,790	1,012	17,895
1966-67	3,509	12,430	0	15,939
1967-68	4,947	10,482	0	15,429
1968-69	5,870	10,803	0	16,673
1969-70	1,470	9,417	0	10,887

[1] Staple length of less than 3/4 inches. [2] 480 pounds net.

Compiled from official records, Bureau of Census.

Domestic consumption

Pakistan's domestic mill and nonmill consumption of cotton has risen dramatically since Independence in 1947. Domestic consumption reached 2 million bales for the first time in 1969-70 and probably reached 2.2 million bales in 1970-71. Most of the expansion was to meet domestic requirements but in recent years a substantial trade in cotton products has been developed.

With expansion planned for the cotton textile industry, it is anticipated that annual consumption will rise further, to about 2.6 million bales by 1975.

Consumption in East Pakistan of raw cotton supplies from West Pakistan has averaged 259,000 bales between 1965-66 and 1969-70. This amounts to about 16 percent of the total consumption of raw cotton in Pakistan for the same period. In 1967-68, East Pakistani consumption amounted to about 20 percent of the total, but in recent years this percent has dropped slightly and in 1969-70 amounted to about 15 percent. The major reason for this reduction is that mill consumption in West Pakistan has increased at a faster rate than in East Pakistan.

In addition to the raw cotton supplied from West Pakistan, the textile mills in East Pakistan also consumed about 20 percent of the cotton imports, which have been the extra-long-staple cotton provided under Title I of P.L. 480.

Governmental and private cotton organizations

The National Government of Pakistan and the Government of West Pakistan have legal authority to maintain fairly comprehensive control over the cotton industry, and some segments of the industry are strictly controlled. In many instances, however, little attempt is made to enforce regulations, particularly where they relate to production.

Several official and private organizations are charged with responsibility for carrying out various phases of the Government's cotton program. These include the Pakistan Central Cotton Committee, the Cotton Board, the Karachi Cotton Association, the All Pakistan Textile Mills Association, the All Pakistan Gin Owners Association, and the Agricultural Development Corporation, as well as the Ministry of Agriculture and West Pakistan Department of Agriculture.

The Pakistan Central Cotton Committee (PCCC), probably the most influential organization, was established by an act of the Government in November 1948. The PCCC is charged with the responsibility of "improvement and development of growing, marketing, and manufacturing of cotton." Most cotton research in Pakistan is carried out under the auspices of the PCCC.

COTTON shipments to East Pakistan from West Pakistan

Month	Year beginning August 1				
	1965-66	1966-67	1967-68	1968-69	1969-70
	Bales[1]	*Bales*[1]	*Bales*[1]	*Bales*[1]	*Bales*[1]
September	3,771	7,654	9,940	10,565	6,884
October	14,280	25,985	12,506	17,363	26,907
November	31,351	17,741	11,396	36,961	28,093
December	37,947	23,909	18,373	44,611	18,851
January	21,608	39,585	36,667	31,688	49,225
February	24,111	35,622	18,335	16,225	42,351
March	24,907	37,325	32,534	28,953	26,881
April	14,265	24,670	37,719	23,241	19,825
May	14,088	24,963	30,155	19,295	14,334
June	6,133	18,710	12,594	20,071	47,671
July	9,460	7,343	15,191	10,236	7,612
August	7,566	6,840	15,219	7,675	6,697
Total	209,487	270,347	250,629	266,884	295,331

[1] 480 pounds net.

The main cotton research stations of the PCCC are located at Thatta, Tandojam, Multan, Lyallpur, and D.I. Khan, which cover the climatic and soil conditions throughout West Pakistan. In East Pakistan, research work on improvement of Comilla cotton is carried out at Raikhali, and that on upland cotton, at Rangpur.

To initiate fundamental and long-range research on cotton from genetic, physiological, and other standpoints, a Central Institute of Agricultural Research under the direction of the PCCC was set up at Multan and began functioning in 1970. A similar Institute is also being established at Rangpur in East Pakistan to serve as the main cotton research center in the Province.

During 1969-70, the PCCC operated 25 research programs in the country. The programs relate mainly to improvement in yield, quality of fiber by plant breeding and cytogenetic methods, multiplication of nucleous seed of the approved Upland and Desi cottons, biological control of cotton bollworms, survey of diseases and investigation of seed-born fungi in relation to cotton crop, maintenance of a world collection of 468 cottons as a genetic pool for research and development and demonstration-cum-research trials on improved agronomic practices in cultivator's own fields.

To effect improvement in the crop, intensive selection and reselection work in commercial varieties and hybridization in local and between local and exotic varieties is underway; and material with combinations of promising yield, higher percent of lint yield, and good fiber length is undergoing various stages of testing at main stations and substations.

The PCCC has played an important role in many of the changes that have taken place in the cotton industry of Pakistan since 1948. In addition to advances through research, much of the legislation relating to cotton has been based on recommendations of this group, and some of the revisions in trading rules for cotton reflect proposals of the Committee.

The Karachi Cotton Association (KCA) provides facilities for the orderly marketing of Pakistan's cotton crop. Its membership consists of representatives of almost all segments of the cotton industry, but cotton traders comprise by far the largest portion of the members. KCA provides facilities for a futures market, establishes standards for cotton quality and rules for cotton trading, and provides panels for arbitration. Four of the 21 members of the Board of Directors are Government nominees. [The Association, with its diversified membership, provides a strong organization for advancing proposals to improve the cotton industry.]

The Cotton Board, an agency of the Central Government, helps coordinate Government cotton policy. Established by the Cotton Control Act of 1957, the Board is charged primarily with promotion of international trade in cotton. The Act also gave the Government wide powers to control cotton trading, both domestic and foreign, and the Cotton Board has the legal authority for enforcement of the Act.

The All Pakistan Textile Mill-Owners Association (APTMA) provides for the Government a convenient organization for assisting in plans and programs for textiles. The APTMA advises the Government on textiles and related matters.

The All Pakistan Gin Owners Association, just recently established, will provide the cotton gin owners a greater voice with the other cotton organizations and the Government. One of the first functions of this Association will be to conduct a full survey of the cotton gin industry.

The Agricultural Development Corporation, established in October 1961 on the recommendation of the Food and Agriculture Commission set up by the Central Government in July 1959, has responsibility for development of new regions for agriculture and for rehabilitation of settled areas.

The ADC's major functions affecting the cotton industry are to make suitable arrangements (throughout the Province) on a commercial basis for the procurement, transport, storage, and distribution to agriculturists of essential supplies such as seed, fertilizers, plant-protection equipment, pesticides, and agricultural machinery and implements, other functions including the management of seed multiplication farms and the renewal and establishment of gins.

THE COTTON TEXTILE INDUSTRY

Cotton textile production and Pakistan have been closely associated for at least 5,000 years. Spinning and weaving of cotton is thought to have originated in the Indus Valley of West Pakistan, as the oldest cotton fabric known to mankind today was unearthed from the ruins of MohenjoDaro, a civilization which flourished 5,000 years ago.

The cotton textile industry of East Pakistan also has a historic place resulting from the Dacca Muslin fabrics, which graced royalty throughout the world for several hundred years. This famous Dacca Muslin was originally made from homegrown cotton, woven by Dacca weavers into superfine fabrics out of yarn of over 100 count and handspun by the cottage industry.

At the time of partition of the Indus Subcontinent in 1947, cotton acreage and production was mostly located in what is now West Pakistan, while the majority of the cotton textile mills were located in what is now India. At that time there existed only 17 cotton textile mills in Pakistan—six in West Pakistan and 11 in East Pakistan, with a total capacity of 178,000 spindles and 4,800 power looms. Annual production was only 30 million pounds of yarn and 88 million yards of cloth. This was far short of the requirements of Pakistan's 90 million people, and thus, large imports of textiles were needed.

The Government embarked on a concerted program to improve the textile industry and to increase production through a series of Governmental sponsored incentives. These incentives included tax moratoriums, rebates of import duties on machinery and other production prerequisites, restricting textile imports, credit arrangements for purchase of textile machinery and establishment of a bonus voucher scheme for textile exports. By the late 1950's the capacity of the textile industry had experienced a dramatic expansion, production increased to the point where imports were negligible and cotton yarn and cloth were being exported.

Pakistan's textile industry is divided officially into two groups, the large well organized mills and the handloom or cottage industry. The handloom industry includes numerous small shops with one to five power looms, so the term "handloom industry" is actually a misnomer. Almost all cotton yarn is produced in the large mills, but the handloom industry accounts for a little more than half of the annual cloth outturn.

The organized industrial sector of the cotton textile industry consists of about 145 factories. Most factories both spin and weave cotton, although at present there exists greater spinning capacity than weaving capacity. The surplus yarn is either sold to the handloom industry or exported.

By 1970, with the number of spindles at 3.0 million and looms at 37,000, cotton yarn production was 770 million pounds, and cotton cloth was 788 million yards. In addition, another 900 million yards of cloth were believed to have been produced by the handloom or cottage textile industry. Exports of cotton textiles account for about 30 percent of total domestic production.

It is believed that in 1971 over 4 million spindles and 42,000 looms have been installed; some estimates place the looms installed at 50,000. As a result of the rapid expansion of the textile industry in the past few years, much of the machinery is now relatively new and modern.

In the mid-1960's a large portion of the machinery was obtained from Japan, but now most of it is being obtained from Eastern Europe, particularly Poland, under credit/barter arrangements. Polish technicians are assisting in setting up and putting this new machinery into operation. Most of the new looms are the large high-speed types.

Spindles, looms, number of hours worked and textile production in Pakistan's cotton textile industry

Year	Number		Number of hours worked		Production[2]	
	Spindles[1]	Looms[1]	Spindles	Looms	Yarn	Cloth
Average:	*Thousands*	*Thousands*	*Millions*	*Millions*	*1,000 pounds*	*1,000 yards*
1950-54	672	10	2,601	38.4	95,821	200,989
1956-59	1,835	28	9,465	127.8	325,666	535,086
1960-64	2,213	32	15,287	181.6	446,397	708,470
1965-69	2,800	37	16,479	184.9	566,924	749,518
Annual:						
1950	290	5	1,155	17.1	43,054	106,295
1951	333	6	1,492	22.5	53,419	127,666
1952	630	9	1,882	30.8	69,699	174,160
1953	793	12	3,517	49.1	120,570	251,576
1954	1,316	18	4,961	72.6	192,364	345,247
1955	1,683	26	7,502	107.8	274,514	453,237
1956	1,801	27	8,301	124.6	300,710	500,384
1957	1,875	28	9,697	132.5	315,873	527,048
1958	1,889	29	12,359	146.2	345,140	576,225
1959	1,928	30	--	--	392,090	618,534
1960	1,941	30	--	--	408,709	628,795
1961	1,998	30	14,309	174.6	412,603	699,035
1962	2,145	32	14,741	175.5	432,243	725,234
1963	2,416	34	15,460	180.5	471,622	730,832
1964	2,567	35	16,638	195.6	506,809	758,455
1965	2,710	37	16,900	164.2	504,700	719,202
1966	2,710	37	16,650	155.1	517,400	704,767
1967	2,747	37	17,531	192.1	552,400	770,841
1968	2,812	36	10,679	196.1	591,500	761,165
1969	3,021	37	20,636	214.7	668,658	791,615
1970	(3)	(3)	(3)	(3)	770,200	787,041

[1] Installed, not necessarily operating. [2] Calendar year. [3] Not available.

Source: Spindles and looms information from Statement by Pakistan Delegation to the 29th ICAC Meeting, October 1970, page 17. Yarn and cloth production information from Pakistan Statistical Office, *Statistical Bulletin.*

Operating efficiency is reported to have improved considerably. Air conditioning has been made available in some mills, which has added to efficiency. Quality controls have been established in most plants and are becoming an integral part of the production process.

It is estimated that 80-85 percent of the cotton textile capacity is located in West Pakistan, with half of this in the Karachi area and the remainder scattered throughout other areas. East Pakistan has about 15 to 20 percent of total capacity.

West Pakistan cotton shipments to East Pakistan in the past 5 years have averaged 16 percent of the total domestic consumption.

The Central Government has continuously tried to encourage expansion of cotton textile production in East Pakistan. The private sector has not been responsive, preferring to invest in the West Wing, where the raw cotton is produced. The fourth Five-Year Plan calls for greater Government investment in East Pakistan's textile industry.

In 1970, there were about 43 cotton textile mills in East Pakistan with about 732,000 spindles and 4,000 looms. East Pakistan's production of cotton yarn in 1970 totaled about 100 million pounds, or 13 percent of the Pakistani total. Cotton cloth production by the large mills totaled 60 million yards, or about 8 percent of the total. Of this mill-produced fabric, about 80 percent was grey cloth, 13 percent dyed and printed, and 7 percent bleached.

The cotton textile industry accounts for about 35 percent of the gross national product contributed by the manufacturing sector. Capital investment in this industry is believed to be over $500 million. About 200,000 people are employed in the textile industry. In addition, there are approximately 500,000 people employed in the handloom or cottage textile industry. It is estimated that over one-half of the industrial work force is employed in the cotton textile manufacturing.

Taxation of the textile industry

The textile industry is the Government's largest source of tax revenue after tobacco and petroleum. In May 1968, a new form of indirect taxation, known as "Capacity taxation," was established for the textile industry. This new tax combined the other forms of taxation that the cotton textile industry was subject to, such as excise duty, sales tax, defense surcharge, and rehabilitation tax.

The basic concept behind this capacity taxation is reported to be: (1) To have a set revenue for the Government; (2) to provide greater incentives to the industry to fully utilize its productive capacity; and (3) to facilitate collection of taxes. To implement the capacity taxation, the Government formed an industry committee to assess the production capacity of each textile unit and establish the tax liability of each individual unit. The tax level varies from mill to mill from $30 to $58 per spindle and from $625 to $2,187 per loom.

Cotton textile production

Production of cotton yarn has increased each year since 1948, except for a slight drop in 1965. Consumption of yarn by the large textile mills amounted to 246 million pounds, or about one-third of the total production. The balance was available for use by the handloom industry or for export. Approximately 23 percent, or 178 million pounds, of the total production was exported in 1970, leaving about 346 million pounds of yarn, or 45 percent, for use by the handloom industry.

Pakistan's cotton yarn production, consumption, and export

Year	Production	Consumption	Surplus[1]	Exports
Average:	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
1950-54	95.8	53.7	42.1	0
1955-59	325.7	142.6	183.1	32
1960-64	446.4	194.2	252.2	39
1965-69	566.9	222.0	344.9	102
Annual:				
1948	29.7	23.5	6.2	0
1949	33.9	24.6	9.3	0
1950	43.1	28.2	14.9	0
1951	53.4	34.0	19.4	0
1952	69.7	47.3	22.4	0
1953	120.6	67.1	53.5	0
1954	192.4	92.1	100.3	(2)
1955	274.5	120.8	153.7	4
1956	300.7	133.4	167.3	28
1957	315.9	142.2	173.7	41
1958	345.1	156.4	188.7	7
1959	392.1	160.2	231.9	82
1960	408.7	171.2	237.5	80
1961	412.6	190.1	222.5	14
1962	432.2	200.6	231.6	5
1963	471.6	196.5	275.1	16
1964	506.8	212.4	294.4	82
1965	504.7	212.3	292.4	58
1966	517.4	206.5	310.9	65
1967	552.4	236.7	315.7	89
1968	591.5	220.6	370.9	143
1969	668.7	233.9	434.8	156
1970[3]	770.2	245.9	524.3	178

[1] Domestically produced yarn available to the handloom industry and for export. [2] Less than 50,000 pounds.
[3] Preliminary.

Source: Pakistan Central Statistical Office, *Statistical Bulletin.*

Cotton cloth production by the large mills totaled 187 million yards in 1970, with the handloom industry contributing probably another 900 million yards to push the total to around 1,687 million yards, or about 12 yards

per person. Annual cotton cloth production by the large mills has increased by only 90 million yards over the past 10 years—from 700 to 790 million yards. Thus mill production of cloth has been relatively static and a large increase cannot occur without additional installation of looms.

Beginning in the mid-1950's there was a gradual shift in the type of fabric produced by the large mills, with more coarse fabrics being produced at the expense of medium fabrics. However, in the past several years this trend has been reversed, as a greater share of production is now of fine and medium fabrics. In 1970, about 60 percent of fabric produced was medium texture, with 12 percent being fine and 28 percent being coarse. About half of the cotton fabrics is sold as grey cloth, 30 percent as dyed and printed cloth, and 20 percent as bleached cloth.

Cotton fabric production in Pakistan[1]

Year	Fine	Medium	Coarse	Total
Average:	*1,000 yards*	*1,000 yards*	*1,000 yards*	*1,000 yards*
1950-54	[2] 24,609	[2] 240,102	[2] 33,700	200,989
1955-59	48,182	302,480	184,424	535,086
1960-64	69,280	375,954	263,236	708,470
1965-69	64,675	385,848	298,995	749,518
Annual:				
1948	([3])	([3])	([3])	88,059
1949	([3])	([3])	([3])	92,445
1950	([3])	([3])	([3])	106,295
1951	([3])	([3])	([3])	127,666
1952	([3])	([3])	([3])	174,160
1953	24,771	191,093	35,712	251,576
1954	24,447	289,112	31,688	345,247
1955	28,629	356,927	67,681	453,237
1956	45,375	330,299	124,710	500,384
1957	56,233	246,924	223,891	527,048
1958	59,397	250,149	266,679	576,225
1959	51,278	328,098	239,158	618,534
1960	57,732	361,253	209,810	628,795
1961	83,985	330,176	284,874	699,035
1962	63,450	370,852	290,932	725,234
1963	67,154	391,842	271,836	730,832
1964	74,078	425,648	258,729	758,455
1965	59,561	379,005	280,636	719,202
1966	52,685	360,094	291,988	704,767
1967	53,380	337,307	380,154	770,841
1968	66,922	398,060	296,185	761,167
1969	90,827	454,775	246,013	791,615
1970[4]	91,334	478,527	217,180	787,041

[1] Excludes handloom production estimated at 800 million to 1 billion yards annually in recent years. [2] For average used 1953-54, breakdown of earlier years not available. [3] Breakdown not available. [4] Preliminary.

Source: Pakistan Statistical Office, *Statistical Bulletin.*

Cotton textile exports

Cotton yarn exports first began in 1955, when 4 million pounds were shipped. By 1970 yarn exports had increased to 178 million pounds (about 23 percent of total production). Hong Kong has been consistantly the major market and in 1970 took 87 million pounds. Singapore, Japan, Burma, and Indonesia are also important markets. Poland became a market in the mid-1960's.

Cotton fabric exports also first began in 1955 on a very small scale and did not reach much volume until the early 1960's. In 1970, cotton fabric exports totaled 446 million yards. The United Kingdom and the United States have been major markets for Pakistani cloth and in 1970 took 149 million yards, or 33 percent of the total, and 60 million, (down 73 million yards from 1969) or 13 percent respectively. Poland, the USSR, and Bulgaria are also important markets, as are the European Community and Canada.

Cotton fabric production in Pakistan by types

Fiscal years	Grey	Bleached	Dyed and printed	Total
FINE				
	Million yards	*Million yards*	*Million yards*	*Million yards*
Average 1965-69 ...	21.5	19.9	25.3	66.7
Annual:				
1965-66	14.3	18.3	20.9	53.5
1966-67	12.0	18.4	21.0	51.4
1967-68	10.2	18.0	23.6	51.8
1968-69	32.2	22.6	29.6	84.4
1969-70	38.6	22.4	31.5	92.5
MEDIUM				
Average 1965-69 ...	176.2	97.6	117.8	391.6
Annual:				
1965-66	157.3	90.9	122.5	370.7
1966-67	133.0	84.7	126.6	344.3
1967-68	128.1	102.6	107.9	338.6
1968-69	220.2	104.0	120.8	445.0
1969-70	242.3	105.7	111.1	459.1
COARSE				
Average 1965-69 ...	188.6	30.9	73.4	292.9
Annual:				
1965-66	172.6	27.5	67.1	267.2
1966-67	217.1	39.9	86.0	343.0
1967-68	238.0	46.0	92.5	376.5
1968-69	153.6	22.8	65.3	241.7
1969-70	161.8	18.4	56.1	236.3
TOTAL				
Average 1965-69 ...	386.3	148.4	216.5	751.2
Annual:				
1965-66	344.2	136.7	210.5	691.4
1966-67	362.1	143.0	233.6	738.7
1967-68	376.3	166.6	224.0	766.9
1968-69	406.0	149.4	215.7	771.1
1969-70	442.7	146.5	198.7	787.9

Source: *Pakistan Statistical Bulletin.*

Cotton Textile Agreements and Quotas

Under an agreement signed with the United States in May 6, 1970, Pakistan agreed to control exports of cotton textiles to the United States for the 4-year period extending from July 1, 1970, through June 30, 1974. For the first year, the agreement provides for an aggregate ceiling of 85 million square yards, with a growth factor to be applied for preceeding years. This new agreement essentially continues the provisions of the 1967 bilateral agreement, under which Pakistan exported over 67 million square yards.

In 1970, the United Kingdom allocated Pakistan a textile quota of 23 million square yards duty free. This quantitative restriction will be eliminated in January 1972 and the duty-free status will be replaced by a duty of 15 percent of cotton cloth, 6.5 percent on cotton yarn, and 17 percent on most made-up textiles.

Cotton yarn exports from Pakistan

Year	Hong Kong	Singapore	Japan	China, Mainland	Indonesia	Poland	Burma	United Kingdom	Other	Total
Average:	*Mil. lb.*	*Mil. lb.*	*Mil. lb.*	*Mil. lb.*	*Mil. lb.*	*Mil. lb.*	*Mil. lb.*	*Mil. lb.*	*Mil. lb.*	*Mil. lb.*
1955-59..	23	(1)	(1)	(1)	(1)	(1)	3	2	4	32
1960-64..	21	(1)	(1)	(1)	(1)	(1)	11	1	6	39
1965-69..	44	10	11	4	6	3	9	1	14	102
Annual:										
1960....	47	1	(1)	(1)	(1)	(1)	14	2	16	80
1961....	9	(1)	(1)	(1)	(1)	(1)	2	1	2	14
1962....	1	(1)	(1)	(1)	(1)	(1)	3	(1)	1	5
1963....	6	(1)	(1)	(1)	(1)	(1)	6	1	3	16
1964....	43	(1)	(1)	(1)	(1)	(1)	30	1	7	82
1965....	18	(1)	(1)	9	17	(1)	10	1	3	58
1966....	28	(1)	(1)	4	5	2	8	(1)	18	65
1967....	38	2	29	(1)	(1)	(1)	8	1	11	89
1968....	66	16	23	(1)	2	5	14	1	16	143
1969....	72	31	4	5	8	11	3	2	20	156
1970....	87	23	18	8	7	4	1	(1)	30	178

[1] If any, included in "other" category.

Source: *Quarterly Statistical Review.*

A bilateral agreement was concluded between the European Community, and the Government of Pakistan on March 12, 1971, for a 3-year period, beginning October 1, 1970; this allows Pakistan to supply 4,300 metric tons of cotton fabrics per year to the EC.

Yarn exports are not expected to expand greatly in the next few years as the domestic textile industry is expected to utilize increased cotton yarn production. Cotton fabric exports, on the other hand, are expected to continue increasing, and by 1975 will probably reach 600 million yards.

Competition from manmade fibers

Production of manmade fiber—at first, entirely from imported raw materials—began in Pakistan in 1965. Prior to that time the manmade fibers were imported. According to trade sources, production of manmade fabrics has risen from only 13 million square yards in 1955-56 to 124 million in 1968-69 and currently accounts for about 7 percent of total fiber consumption.

It is estimated that about 300 factories produce rayon fabrics; these are small-scale units with 20-50 looms. Only a few factories are equipped with 100 or more looms. Total looms for manmade production are about 8,400 power looms and 32,000 hand-operated looms. In recent years Warp Knitting and Ratchel machines, about 400 in total, have reportedly been installed.

About half of the manmade fabric production depends on such imported yarns as viscose, nylon and polyester. These imports are subject to high customs duties (about 250 percent) in addition to the cost of obtaining foreign exchange through use of bonus vouchers.

Production of manmade fiber yarns began in 1966, and by 1968, totaled 14.51 million pounds, of which nylon yarn accounted for 3.25 million, and acetate and viscose yarns, 6.08 million each. The production capacity for manmade yarns is reported at 4,500 tons of acetate, 5,000 of viscose, and 6,000 of nylon.

Future development plans call for annual production of polyester yarn (7,500 tons), nylon chips (1,000 tons), and nylon twine (1,100 tons). This production will be part of a petro-chemical complex utilizing the abundant natural gas reserves of West Pakistan.

Viscose, acetate, and nylon fabrics are used for feminine apparel, mostly saris, in the urban areas. But about 80 percent of the population is in the rural area, so this represents only a small market. Cotton should continue to be used almost exclusively in these rural areas for many years to come.

Because of the rural dwellers preference for cotton, as well as the relatively hot humid climate of the country and the structure of the industry and the economy in general, manmade fiber production and consumption will probably not increase beyond 10-12 percent of the total textile consumption in the next few years. However, there

Cotton fabric exports from Pakistan

Year	United Kingdom	United States	Poland	USSR	Aden	Bulgaria	Canada	Singapore	Afghanistan	Indonesia	Kenya	Others	Total
Average:	*Mil. yards*	*Mil. yards*	*Mil. yards*	*Mil. yards*	*Mil. yards*	*Mil. yards*	*Mil. yards*	*Mil. yards*	*Mil. yards*	*Mil. yards*	*Mil. yards*	*Mil. yards*	*Mil. yards*
1955-59	7	2	(1)	(1)	1	(1)	(1)	(1)	(1)	(1)	(1)	5	15
1960-64	35	15	(1)	(1)	8	(1)	3	1	1	(1)	3	23	89
1965-69	67	46	13	9	10	9	9	11	9	7	6	71	267
Annual:													
1960	39	12	(1)	(1)	6	(1)	1	(1)	1	(1)	(1)	17	76
1961	21	8	(1)	(1)	7	(1)	(1)	(1)	1	(1)	1	16	54
1962	32	12	(1)	(1)	6	(1)	1	(1)	(1)	(1)	1	11	63
1963	40	28	(1)	(1)	9	(1)	(1)	(1)	(1)	(1)	1	15	93
1964	42	16	(1)	(1)	13	(1)	15	4	(1)	(1)	11	58	159
1965	46	30	(1)	4	9	(1)	9	7	5	10	15	42	177
1966	50	48	2	9	11	1	4	9	18	14	8	38	212
1967	86	36	1	10	6	5	8	3	10	4	2	69	240
1968	81	44	13	8	14	15	14	30	6	3	2	93	323
1969	73	73	49	16	11	24	9	8	7	4	1	106	381
1970	149	60	46	26	12	11	9	8	6	5	2	112	446

[1] If any, included in "others" category.

Source: *Quarterly Statistical Review.*

Pakistan's production of manmade fiber fabric and imports of manmade fiber yarn

Year	Production of manmade fabric	Imports of manmade yarn	Year	Production of manmade fabric	Imports of manmade yarn
	Million yards	*Million dollars*		*Million yards*	*Million dollars*
1961-62	15.2	5.1	1965-66	35.5	6.6
1962-63	18.6	4.0	1966-67	45.5	6.8
1963-64	35.3	7.3	1967-68	74.1	[1] 10.5
1964-65	32.2	7.7	1968-69	124.1	10.3

[1] Represents the imported cost of 15 million pounds of materials.

Source: Trade publication.

is the long-term possibility that manmade fibers by 1985 could have 25 percent of total fiber consumption if cotton production continues to lag behind demand and there are significant fluctuations in supply and prices of cotton relative to manmade fibers.

Textiles and the fourth Five-Year Plan

Because of the importance of cotton production and the cotton textile industry to the economy of Pakistan and the need to increase per capita availability of textiles for an expanding population, the Government of Pakistan places a high priority on the development of these sectors. Cotton textile production is given an important role in the industrial section of the fourth Five-Year Plan for economic development, which covers the period to mid-1975. This is made more relative by the fact that Pakistan has been noted for its success in reaching goals set in previous five-year plans and is expected to be equally successful in approaching the goals set forth in this one.

Highlights of the section pertaining to the cotton textile industry, as outlined in the fourth Five-Year Plan are:

- Per capita consumption of cotton cloth is to rise to 15 yards by 1974-75 from 12 yards in 1969-70. The major part of this increase is planned for East Pakistan.
- To bring this increase in per capita consumption, production of 1,000 million pounds of yarn and 2,838 million yards of cloth are needed.
- To achieve the plan target of 1,100 million pounds of yarn, an additional 1.62 million new spindles need to be installed (1.55 million in East Pakistan and 70,000 million in West Pakistan). In 1969-70 there were 800,000 spindles authorized to be installed in East Pakistan and 2.73 million in West Pakistan.
- A total of 2,838 million yards of cotton cloth will be required by 1974-75 with 1,704 million yards to be supplied by the handloom or cottage industry (950 million yards in East Pakistan and 750 million in West Pakistan). For the mills to meet their production target will require about 79,400 looms compared with the approximately 41,500 looms installed or authorized to be installed (6,900 in East Pakistan and 34,600 in West Pakistan) in 1969-70. Thus 37,900 looms (26,900 in East Pakistan and 11,000 in West Pakistan) remain to be installed by 1974-75.
- Exportation of mill-made cloth is planned at 600 million yards (10 million from East Pakistan and 590 million from West Pakistan) with the exportation of cotton yarn planned at 190 million pounds (180 from West Pakistan and 10 million from East Pakistan).
- Since the margin of profit on cloth and yarn is higher than on raw cotton, the export of cotton textiles is preferred.

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